DRAFT 02-17-06

GOODS MOVEMENT ACTION PLAN

PHASE II PROGRESS REPORT:

DRAFT FRAMEWORK FOR ACTION

This document is a work in progress and is not an official position of the Business, Transportation and Housing Agency, the California Environmental Protection Agency, or the Administration. This document is being released to obtain input and comments from all interested stakeholders.

This document has not yet been reviewed by the Integrating Work Group and does not reflect the position of the Work Group as a whole or necessarily the position of any individual member/organization of the Work Group.

Prepared by

Business, Transportation and Housing Agency
and
California Environmental Protection Agency

February 2006

PREFACE

Much work has been done at local and regional levels to address important goods movement issues. Notable long-term efforts include work conducted by the Southern California Association of Governments[1] and the Metropolitan Transportation Commission.[2] As the state develops its goods movement initiatives, the integrity of local and regional processes must be maintained while adding elements that benefit from a statewide approach.

Beginning in June 2004, the Schwarzenegger Administration began a concerted effort to assemble goods movement stakeholders to learn about the problems, opportunities, and challenges facing the future of goods movement within the State. The input generated by these meetings resulted in the formation of the Goods Movement Cabinet Work Group in December 2004, co-chaired by Secretary Sunne Wright McPeak of the Business, Transportation and Housing Agency (BTH) and Secretary Alan Lloyd of the California Environmental Protection Agency (Cal/EPA). Their efforts led to the publication of the Administration Goods Movement Policy, "Goods Movement in California," in January 2005.

Secretaries McPeak and Lloyd then convened a series of "listening sessions" in Los Angeles on January 27, 2005 and March 24, 2005 and in Oakland on February 11, 2005, to hear from the full range of stakeholders engaged or impacted by goods movement activities. Collectively, these sessions attracted 325 participants who offered specific ideas and recommendations to resolve issues associated with the growth of the goods movement industry and the mitigation of its impacts. Summaries of participants' oral comments and submitted written testimony are posted on the BTH and Air Resources Board (ARB) websites.[3]

The development of the Goods Movement Action Plan is a two-phase process. The Phase I draft document, released on September 2, 2005, characterizes the "why" and the "what" of the state's involvement in goods movement in the following four segments: (1) the goods movement industry and its growth potential; (2) the four "port-to-border" transportation corridors that constitute the state's goods movement backbone and the associated inventory of infrastructure projects that are being planned or that are underway; (3) the extent of environmental and community impacts—as well as a description of mitigation approaches; and (4) key aspects of public safety and security issues.

Substantial effort was focused in the development of the Phase I report to compile an inventory of existing and proposed goods movement infrastructure projects. The listing includes previously identified projects in various Regional Transportation Plans (RTPs) and Regional Transportation Improvement Programs (RTIPs) prepared by Municipal Planning Organizations (MPOs), Regional Transportation Commissions (RTCs), and Councils of Governments (COGs). In addition, the listings include a wide range of outlined projects underway or under

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[1] Southern California Association of Governments, Southern California Strategy for Goods Movement: A Plan for Action, February 2005.

[2] Metropolitan Transportation Commission, Regional Goods Movement Study for the San Francisco Bay Area, December 2004.

[3] The URL for the Business, Transportation, and Housing Agency website is www.bth.ca.gov and for the Air Resources Board website is www.arb.ca.gov.

consideration by the ports, railroads, and other third parties. Prior to this compilation, no comprehensive statewide inventory was available.

The Phase II Action Plan, to be completed by Spring 2006, will develop a statewide action plan for goods movement capacity expansion, goods movement-related public health and environmental impact mitigation and community impact mitigation, and goods movement-related security and public safety enhancements. It will define the "how," "when," and "who" required to synchronize and to integrate efforts to achieve simultaneous and continuous improvement as discussed in this report.

The Phase II effort is a stakeholder-based process with input from the public in an open and transparent public setting. Comprised of industry, community, and environmental leaders, an Integrating Work Group was assembled in October 2005 to provide input to the Cabinet Work Group regarding a framework for decision-making and regarding candidate actions.

The Integrating Work Group is supported by a series of six subject-specific work groups:

- Infrastructure Work Group
- Public Health and Environmental Mitigation Work Group
- Community Impact and Mitigation and Workforce Development Work Group
- Security and Public Safety Work Group
- Innovative Finance and Alternative Funding Work Group
- Technology Work Group

Each of the supporting work groups discusses the technical and public policy issues within their domain. The Integrating Work Group resolves conflicts among the supporting groups to the extent possible and provides critical input to assist BTH and Cal/EPA in producing a series of comprehensive, consistent, and practical recommendations for action.

A key component of the Phase II plan will be the Air Resources Board's Emission Reduction Plan for Ports and International Goods Movement, which is currently undergoing a public review process.

ACKNOWLEDGMENTS

BTH Undersecretary Barry Sedlik, Cal/EPA Assistant Secretary for Policy Cindy Tuck and ARB Executive Officer Catherine Witherspoon provided overall project management for the Phase II effort.

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California Environmental Protection Agency
Alan C. Lloyd, Ph.D.
Agency Secretary

Business, Transportation & Housing Agency
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January 27, 2005

GOODS MOVEMENT IN CALIFORNIA

Improving the movement of goods in California is among the highest priorities for Governor Schwarzenegger. The State's economy and quality of life depend upon the efficient, safe delivery of goods to and from our ports and borders. At the same time, the environmental impacts from goods movement activities must be reduced to ensure protection of public health.

The goods movement and logistics industry is an increasingly important sector of good jobs for Californians. It is vital to grow the industry by improving the essential infrastructure needed to move goods from California's ports throughout California and to the rest of the country with a focus on the entire "coast to border" system of facilities, including seaports, airports, railways, dedicated truck lanes, logistics centers, and border crossings. This system of facilities is critical to the national goods movement network and must be the focus of a partnership with the federal government. Improving the goods movement infrastructure also is pivotal to relieving congestion on freeways and increasing mobility for everyone in California. Further, it is vital that local, state and federal authorities cooperate to ensure port, rail and road safety and security.

It is the policy of this Administration to improve and expand California's goods movement industry and infrastructure, in a manner which will:

- Generate jobs.
- Increase mobility and relieve traffic congestion.
- Improve air quality and protect public health.
- Enhance public and port safety.
- Improve California's quality of life.

The Schwarzenegger Administration has established a Cabinet Work Group to lead the implementation of this policy for goods movement and ports by working collaboratively with the logistics industry, local and regional governments, neighboring communities, business, labor, environmental groups and other interested stakeholders to achieve shared goals.

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GOODS MOVEMENT ACTION PLAN

PHASE II: PROGRESS REPORT FRAMEWORK FOR ACTION

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I. EXECUTIVE SUMMARY

The Goods Movement Action Plan is an initiative of the Schwarzenegger Administration to improve and expand California's goods movement industry and infrastructure in a manner which will:

- Generate jobs.
- Increase mobility and relieve traffic congestion.
- Improve air quality and protect public health.
- Enhance public and port safety.
- Improve California's quality of life.

The effort was launched in January 2005 when the Cabinet Goods Movement Work Group was formed to examine the many issues surrounding one of California's leading industries and to make recommendations for needed actions to the Governor. This document presents a progress report of the Phase II effort that has been underway since November 2005. The report includes a preliminary set of recommendations for operational improvements, infrastructure additions, public health and environmental impact mitigation actions, community impact mitigation actions, and security and public safety improvement efforts.

The Phase II effort, which is expected to be completed in Spring of 2006, focuses on action: getting to the particulars of "the how," "the when," and "the who" necessary to make needed improvements and address serious environmental and community concerns about goods movement operations. The staggering growth of the industry as a consequence of changing global business trends provides California with great opportunities and great challenges. If needed infrastructure investments are made, growth of the industry can be a source of high wage jobs to California's growing population. If infrastructure investments are stalled or not made, job growth may be more limited and aging infrastructure will likely have more difficulty serving the future needs of Californians. Similarly, if needed investments are made to address serious environmental and community concerns associated with goods movement, public health and quality of life can be improved. If investments are not made to address the serious environmental and community concerns associated with goods movement sources and increases in goods movement sources, already high levels of air pollutions and the associated health effects and other environmental and community impacts will continue to increase and harm public health and quality of life.

The complexity of the industry, the urgency of the needs for environmental and community impact mitigation, and the vulnerabilities of vital infrastructure to the threat of terrorism require that decisions be made now about California's next two to three decades. While the combinations and permutations of outcomes are almost endless, it is the Administration's responsibility to develop the best information possible and take prudent action even though uncertainties remain. Public health and the economics of goods movement are too important to the people of California to take no action.

Specifically, a statewide perspective enables:

- Assessment of projects at part of a statewide goods movement system.
- Comparison of port, rail, and highway projects in a common framework.
- Identification of critical environmental mitigation and community mitigation actions.
- Prioritization of projects and actions to address the most important needs first.
- Concentration of effort to secure required funding in an orderly fashion.
- Evaluation of performance to determine if state, regional, and community benefits are achieved.

A systematic and transparent "framework for action" is necessary if these benefits are to be achieved. Building the framework on a performance measurement platform provides a means to evaluate, select, and fund candidate projects and actions relative to statewide merit. The framework is built on a foundation of internally consistent principles aligned with Administration policy. Consistent with defined principles, a series of evaluation criteria are established to judge the merits of prospective projects or actions. Criteria are defined for infrastructure and operational improvements, environmental impact mitigation, community impact mitigation, and public safety/homeland security. Concurrently, performance metrics are established to quantify and assess outputs and outcomes relative to expectations. Finally, sets of benchmarks are developed, where appropriate, to judge how performance relates to "best-in-class" for comparable projects or actions executed elsewhere. In order to give context to the preliminary candidate actions, their selection and implementation timeframe, one must keep in mind the thematic considerations of the 22 guiding principles:

- Undertake simultaneous and continuous improvement in infrastructure and mitigation.
- Consider the four port-to-border corridors as one integrated system.
- Pursue excellence through technology, efficiency, and workforce development.
- Develop partnerships to advance goals.
- Promote trust, provide for meaningful public participation, and ensure environmental justice consistent with state law.

The table of preliminary candidate actions below is a result of the qualitative process described above and in consideration of the guiding principles. The resulting inventory identifies statewide priority candidate actions in four categories:

- Infrastructure Projects and Operations.
- Public Health and Environmental Impact Mitigation
- Community Impact Mitigation and Workforce Development.
- Public Safety and Homeland Security.

The table organizes the priority actions as noted above and applies a timeframe to designate immediate, short-term, intermediate-term, and long-term actions within each area of focus. The timeframe can be interpreted (roughly) in the following terms:

- Immediate (immediate implementation, generally operational improvements)
- Short-term (0-3 years)
- Intermediate-term (4-10 years)
- Long-term (10+ years)

Actions are assigned to the timeframe based on considerations of complexity and scope. By scanning vertically through the columns of the table, one can identify actions within the same timeframe and across all four categories. Conversely, moving horizontally across the table will reveal actions in the same area of goods movement over the four timeframes. In the consideration of Infrastructure and Operations and Public Health and Environmental Impact Mitigations, there are further delineations within the table that group mode-specific actions. Chapter IV of this document includes additional tables that further delineate the preliminary candidate actions by each of the four goods movement corridors (Bay Area, Central Valley, Los Angeles/Inland Empire and San Diego/Border).

Chapter V of the text below describes how the principle of "simultaneous and continuous improvement" will be implemented to ensure that public health is protected as the state's goods movement infrastructure needs are being met. Chapter VI discusses funding options and Chapter VII discusses preliminary information regarding technological innovations.

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Infrastructure and Operations	Operational Improvements Ships ➢ Spread out vessel sailings and arrivals in the trans-Pacific trade ➢ Evaluate short- sea shipping – including environmental impacts ➢ Increase "destination loading" on ships from the far east ➢ Finalize ARB ship auxiliary engine rule (i.e., Office of Administrative Law (OAL) review) Ports ➢ Operate ports during extended hours ➢ Offer incentives to reduce marine terminal dwell time for containers ➢ Expand labor force at the ports ➢ Implement virtual container yards ➢ Implement incentives to limit container dwell time ➢ Finalize ARB intermodal cargo equipment rule (OAL) Rail ➢ Evaluate shuttle train pilot project performance ➢ Utilize more rail for long haul ➢ Finalize ARB intermodal cargo equipment rule (OAL) Trucks ➢ Develop regional or national chassis pools ➢ Establish port-wide terminal appointment systems for truckers Other ➢ Employ better trade and transportation forecasting ➢ Improve communications of fluctuating demand forecast for labor and equipment among carriers, railroads and terminal operators ➢ Enact public-private partnership legislation ➢ Enact design-build and design sequencing legislation	Infrastructure Projects ➢ Construct Alameda Corridor State Route 47 Expressway (includes Schuyler Heim Bridge replacement) ➢ Conduct Environmental Study: Interstate 710 Corridor Improvements (including dedicated truck lanes) ➢ Replace Gerald Desmond Bridge ➢ Construct BNSF "Southern California International Gateway" Near Dock Facility ➢ Complete Union Pacific Near Dock Intermodal Container Transfer Facility ➢ Construct on-dock rail improvements - POLB* ➢ Construct on-dock rail improvements – POLA* ➢ Construct Alameda Corridor East - grade separations, grade crossing improvements (Burlington Northern, Santa Fe and Union Pacific lines) ➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)* ➢ Construct Hegenberger Road to I-980 operational improvements ➢ Construct I-80/I-680/SR 12 interchange improvements, phase II ➢ Reconstruct 7th Street/Union Pacific Grade Separation ➢ Construct outer harbor intermodal terminal at Port of Oakland ➢ Construct State Route 905 Six-Lane Freeway (from Mexico border/Otay Mesa Port of Entry to Interstate 805) ➢ Improve Central Corridor Line	Infrastructure Projects ➢ Construct on-dock rail improvements – POLB* ➢ Construct on-dock rail improvements – POLA* ➢ Construct Alameda Corridor East - grade separations, grade crossing Improvements (Burlington Northern Santa Fe and Union Pacific lines)* ➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)* ➢ Construct truck lanes, SR 14 to Calgrove Blvd. ➢ Construct Colton Crossing BNSF/UP Rail Grade Separation ➢ Construct I-80/I-680/SR 12 Interchange Improvements, Phase III ➢ Construct I-80/I-680/SR 12 Interchange Improvements, Phase IV* ➢ Widen SR 99, 4 to 6 lanes, Goshen to Kingsburg ➢ Widen SR 99,4 to 6 lanes, Prosperity Ave. to Goshen	Infrastructure Projects ➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)* ➢ Construct Interstate 710 Corridor improvements (including dedicated truck lanes) ➢ Construct I-580 Eastbound truck climbing lane ➢ Construct I-580 Westbound truck climbing lane ➢ Construct I-80/I-680/SR 12 Interchange Improvements, Phase IV*

* These infrastructure projects appear in more than one time frame due to the complexity and/or scope of the specific project. See the Preliminary Working List of Proposed Projects in Appendix C for more details.

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS

		Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Mitigation – Air Quality	Ships	➢ Lobby for ratification of MARPOL Annex 6 for international shipping ➢ Implement vessel speed reduction MOU in Southern California ➢ Finalize ARB ship auxiliary engine rule (i.e., Office of Administrative Law (OAL) review)	➢ Utilize lower sulfur fuel (0.5% by 2007) for marine auxiliary engines ➢ Dedicate cleanest vessels to California service (ongoing) ➢ Increase use of cleaner fuels in ships (ongoing) ➢ Increase use of shore power or alternatives for ships (ongoing) ➢ Expand vessel speed reduction program	➢ Utilize lower sulfur fuel (0.1% by 2010) for ship auxiliary engines ➢ Obtain Sulfur Emission Control Area (SECA) designation ➢ Retrofit existing main engines on ships during major maintenance (ongoing) ➢ Install emission controls on ship main/auxiliary engines of frequent flyers (ongoing) ➢ Continue ongoing strategies	➢ Continue ongoing strategies
	Locomotives	➢ Utilize CA low sulfur diesel for captive instate locomotives ➢ Implement 1998 Railroad MOU for South Coast Air Basin ➢ Implement 2005 Statewide MOU for Rail Yard Risk Reduction	➢ Upgrade engines in switcher locomotives ➢ Retrofit existing locomotive engines with diesel PM controls ➢ Use cleaner fuels in locomotives, particularly for captive fleets and/or new facilities	➢ Implement Tier 3 US standards for line haul locomotives (new engine and rebuild standards) ➢ Implement US low sulfur fuel for interstate locomotives ➢ Concentrate Tier 3 locomotives in California (ongoing)	➢ Continue ongoing strategies
	Trucks	➢ Utilize CA low sulfur diesel for trucks ➢ Conduct smoke inspections for trucks in communities ➢ Enforce 5 minute idling limit for trucks ➢ Accelerate software upgrade for trucks ➢ Implement incentives for cleaner trucks	➢ Modernize (replace and/or retrofit) port trucks (ongoing) ➢ Implement CA/US 2007 truck emission standards ➢ Require international trucks to meet US emission standards ➢ Enforce CA rule for transport refrigeration units on trucks, trains, ships ➢ Enhance enforcement of truck idling limits	➢ Restrict entry of trucks new to port service unless equipped with diesel PM controls ➢ Continue ongoing strategies	➢ Continue ongoing strategies
	Cargo Handling Equipment	➢ Utilize CA low sulfur diesel for equipment ➢ Finalize ARB intermodal cargo equipment rule (i.e., OAL review) ➢ Implement State incentives for cleaner fuels at Ports of Los Angeles and Long Beach	➢ Clean up cargo handling equipment through replacement, retrofit, or alternative fuels (ongoing) ➢ Implement fork lift rule for gas-fired equipment (ongoing) ➢ Require green equipment for goods movement related construction and maintenance	➢ Implement CA/US Tier 4 equipment emission standards ➢ Upgrade cargo handling equipment to 85% diesel PM control or better ➢ Continue ongoing strategies	➢ Increase penetration of zero emission or near zero emission cargo handling equipment ➢ Continue ongoing strategies
	Commercial Harbor Craft	➢ Implement incentives for cleaner harbor craft	➢ Utilize CA low sulfur diesel for harbor craft ➢ Clean up harbor craft through replacement, retrofit, or alternative fuels (ongoing) ➢ Use shore power for harbor craft at dock	➢ Implement new engine standards for harbor craft ➢ Implement incentives to accelerate introduction of new harbor craft engines ➢ Continue ongoing strategies	➢ Continue ongoing strategies

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS				
	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Mitigation – Water Quality	➢ Implement better land use planning and low impact development practices when feasible in the design and construction of infrastructure projects; ➢ Preserve open space to facilitate infiltration for the recharge of aquifers and reduction of storm water runoff ➢ Minimize land disturbance and impervious cover ➢ Incorporate natural site elements into design	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions
Public Health and Environmental Mitigation – Hazardous Waste Management	[Placeholder]			

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development	Note: The actions listed in the Public Health and Environmental Mitigation section will provide significant health benefits to communities adjacent to ports, rail yards, intermodal facilities and highways. Additional general actions include: Strategies ➢ Enforce anti-idling rules ➢ Reroute trucks ➢ Conduct mitigation and pollution prevention ➢ Develop community benefit agreements ➢ Conduct targeted community assessments including monitoring as appropriate ➢ Track emission reductions and estimated cancer risk reduction in communities ➢ Preserve existing parks, open space and natural areas ➢ Coordinate with local city redevelopment departments to identify priority enhancement areas in adjacent communities ➢ Develop and implement community enhancement projects ➢ Emphasize landscaping and aesthetic improvements using local native plants ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues Public Participation ➢ Expand public outreach ➢ Consult community members regarding infrastructure plans throughout the planning process ➢ Establish Community Advisory Committee for the EIR /EIS stage of an infrastructure project (for projects that have not already gone through the environmental review process) Continued	➢ Ongoing implementation of immediate actions ➢ Use green equipment for construction of infrastructure projects (as available) ➢ Establish construction staging areas in locations so as to minimize impact on local circulation ➢ Establish a community forum to address community concerns during construction ➢ When considering operational changes to extend hours (including during construction), evaluate noise and light impacts on adjacent communities ➢ Mitigate noise impacts in adjacent communities ➢ Mitigate light impacts in adjacent communities .	➢ Ongoing implementation of immediate and short-term actions	➢ Ongoing implementation of immediate, short-term, intermediate-term and long-term actions

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS				
	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development, Continued	Public Participation, Continued ➢ Hold public meetings when members of the affected community can attend (e.g., in the evening) ➢ Include language translation where appropriate ➢ Draw on knowledge and experience from the community Land Use Planning ➢ Integrate port and city planning/promote use of buffer zones between ports and surrounding communities Workforce Development		➢ Provide Goods Movement Job Training within Affected Communities	

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Safety and Security	<u>Operational Improvements, Evaluations and Studies</u> ➢ Establish Foreign Export and Recovery ➢ Establish a Port Security Task Force ➢ Evaluate cross-sectoral vulnerability of ports (power, water, etc) ➢ Evaluate all truck and rail routes out of port districts and air basins to determine long term velocity, security and environmental opportunities ➢ Develop a Federal, State and Local funding strategy ➢ Evaluate the "Agile Port" concept for public safety/homeland security advantages ➢ Use the NAFTA model to understand the public safety and security issues ➢ Evaluate lane departure technology to identify driver fatigue and safety scoring of operators ➢ Continue support and implementation of safety improvement programs ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues	➢ Construct commercial vehicle enforcement facilities around the LA/LB and Oakland ports to enhance highway safety and security ➢ Establish a pilot test program using hazardous materials movement of containers and a short haul rail system that "flushes out" the containers in the ports and rail yards ➢ Develop a pilot project for creating a physical communication grid in the corridor ➢ Use intelligence and automated info to identify and target high-risk containers ➢ Pre-screen high-risk containers at point of departure ➢ Use new detection technology to quickly prescreen ➢ Develop joint inspection stations in the port districts and at the border ➢ Develop community web portal to provide real or near real time information on goods movement and freight mobility conditions across road and rail network within the region ➢ Clear U.S. Customs at inland destinations	➢ Retrofit freight vehicles with probes and smart sensors to measure speed, weather, pollution, lane departure, cargo location, customs data, container RFID information, and vehicle/frame condition inspection dates ➢ Use smarter, tamper-evident containers ➢ Develop a container loading and unloading program (similar to CTPAT) that addresses homeland security issues like peaking for local California businesses	➢ Develop a Green Freight Corridor (similar to Customs Green Lane) program and system ➢ Install sensors and environmental monitoring equipment along corridor to communicate between operators, vehicles, containers and the command center ➢ Establish three integrating centers for all data and system managements at the ports, Mexican border and the Inland Empire using the Metrolink model ➢ Provide data feeds from corridor system to County Emergency center, the Command and Control Center at Camp Pendleton, the CHP command centers, and NORTHCOM ➢ Develop a program that helps local California business (manufacturers, retailers, and wholesalers) capture velocity, congestion, and pollution for their imports and exports

II. INTRODUCTION

A. Overview

The Goods Movement Action Plan is an initiative of the Schwarzenegger Administration to improve and expand California's goods movement industry and infrastructure in a manner which will:

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- Improve California's quality of life.

The effort was launched in December 2004 when the Cabinet Goods Movement Working Group was formed to examine the many issues surrounding one of California's leading industries and to make recommendations for needed actions to the Governor. This document presents a progress report of the Phase II effort that has been underway since November 2005. The report includes a preliminary set of recommendations for operational improvements, infrastructure additions, public health and environmental impact mitigation actions, community impact mitigation actions, and security and public safety improvement efforts.

The Phase II effort, which is expected to be completed in Spring 2006, focuses on action: getting to the particulars of "the how," "the when," and "the who" necessary to make needed improvements and address serious environmental and community concerns about goods movement operations. The staggering growth of the industry as a consequence of changing global business trends provides California with great opportunities and great challenges. If needed infrastructure investments are made, growth of the industry can be a source of high wage jobs to California's growing population. If infrastructure investments are stalled or not made, job growth may be more limited and aging infrastructure will likely have more difficulty serving the future needs of Californians. Similarly, if needed investments are made to address serious environmental and community concerns associated with goods movement, public health and quality of life can be improved. If investments are not made to address the serious environmental and community concerns associated with goods movement sources and increases in goods movement sources, already high levels of air pollutions and the associated health effects and other environmental and community impacts will continue to increase and harm public health and quality of life.

The complexity of the industry, the urgency of the needs for environmental and community impact mitigation, and the vulnerabilities of vital infrastructure to the threat of terrorism require that decisions be made now about California's next two to three decades. While the combinations and permutations of outcomes are almost endless, it is the Administration's responsibility to develop the best information possible and take prudent action even though uncertainties remain. Public health and the economics of goods movement are too important to the people of California to take no action.

New actions must be taken to address the threats to public health from air pollution in the goods movement corridors as quickly as possible. The ships, trains, trucks, and other goods movement equipment that use diesel fuels are a major contributor to this problem. Similarly, residents in communities adjacent to goods movement corridors bear a disproportionate fraction of noise, vibration, glare, blight, and traffic congestion that diminish their quality of life. Solutions to these issues must also be found and implemented.

Such a wide range of issues deserving of immediate attention can be overwhelming to the point of paralysis. The focus of the Phase II effort to date has been on developing a "framework for action." That framework must address these issues in a comprehensive manner to yield a range of solutions that provides relief and improvement over periods from the immediate to the long term. This February 2006 progress report summarizes the second iteration of that effort. Chapter V presents information regarding the mechanism that would be in place to ensure that the various types of action move forward on a simultaneous and continuous basis.

B. Public Health and Environmental Mitigation: Problem, Goals and Action

1. Public Health

Goods movement is now the dominant contributor to transportation-related emission in the State. As trade increase, goods movement-related emissions are expected to increase dramatically unless aggressive action is taken. Such action is critical because air pollution from international trade and goods movement in California is a major public health concern at both the regional and community level. Adverse health impacts from the pollutants associated with goods movement include but are not limited to premature death, cancer risk, respiratory illnesses, and increased risk of heart disease. ARB staff estimates that emissions from current international goods movement activities result in approximately 750 premature deaths per year. Without additional emission controls, that figure is estimated to rise to approximately 920 premature deaths by 2020. Additionally, the health impacts result in work loss days, minor restricted activity days and school absence days. For more detailed information regarding goods movement-related air pollution and related public health impacts, please see both the Goods Movement Action Plan Phase I Report and Appendix D to this document (the Air Resources Board (ARB) Emission Reduction Plan for Ports and International Goods Movement in California).

2. Air Quality Goals

As set forth in the Phase I report, the four specific goals for addressing the air pollution associated with goods movement are:

1) reduce emissions to 2001 levels by 2010;
2) continue reducing emissions past those levels until attainment of applicable standards is achieved;
3) reduce diesel-related health risks 85% by 2020; and
4) ensure sufficient localized air toxics risk reduction in each affected community.

3. ARB Emission Reduction Plan for Ports and International Goods Movement in California: Purpose, Overview of Current Draft and Process

To achieve the four goals specified above, a key part of the Goods Movement Action Plan will be the ARB's Emission Reduction Plan for Ports and International Goods Movement in California (Emission Reduction Plan). The Emission Reduction Plan will also be an essential component of California's actions to meet the new federal air quality standards for ozone and fine particulate (PM 2.5).

The draft Emission Reduction Plan identifies the 2001 emissions inventory as a starting point for analysis. In developing the draft Plan, ARB considered the No Net Increase strategies that are included in the June 2005 No Net Increase Report for the Port of Los Angeles. ARB released a first draft of the Emission Reduction Plan on December 1, 2005. ARB is refining the draft plan based on input from the general public, affected industries, the Cal/EPA and BT&H Goods Movement Action Plan work groups, local air districts and other interested parties and stakeholders. For example, based on public comment, ARB is expanding the scope of the Plan to include emissions from domestic goods movement. ARB has also sought scientific peer review of its health risk assessment methodology and conclusions. ARB is in the process of conducting public workshops on the plan throughout California. ARB plans to consider public testimony regarding and approval of the Emission Reduction Plan in April of 2006.

The current draft of the Emission Reduction Plan is available at http://www.arb.ca.gov/planning/gmerp/gmerp.htm

This draft of the Emission Reduction Plan includes:

- A health impacts assessment.
- An emissions inventory.
- Emission reduction targets.
- Emission reduction strategies.
- Benefits and Costs.

The draft emission reduction strategies from the draft Emission Reduction Plan are listed in Chapter IV of this report. Specifically, the draft strategies are listed in the Preliminary Candidate Actions table section entitled "Public Health and Environmental Mitigation – Air Quality." This list of strategies is subject to change during the ARB public process for the draft plan.

Successful implementation of the final version of the ARB Emission Reduction Plan will depend upon actions at all levels of government and partnership with the private sector. No single entity can solve this problem in isolation. The basic strategies to reduce emissions include regulatory actions, incentive programs, lease agreements, careful land use decisions, and voluntary actions. The measures address all significant emission sources involved in goods movement including marine vessels, harbor craft, cargo handling equipment, locomotives, and trucks.

Specific actions to reduce goods movement emissions are already underway. Rules for sources under ARB's direct regulatory authority have been adopted and more are on the way. Likewise,

the U.S. Environmental Protection Agency (U.S. EPA) is working on national regulations affecting marine vessels, locomotives, and harbor craft, scheduled for promulgation next year. Together, ARB staff, U.S. EPA staff, and other state representatives are exploring a potential "Sulfur Emission Control Area" (SECA) designation for parts of the U.S. coastline, which would require all visiting vessels to use lower sulfur fuels. A significant amount of existing incentive funds have been applied to goods movement emission sources and ARB has prioritized continued funding on this source of statewide significance. Finally, several local entities are pursuing elements of the emission reduction plan through their own ordinances, regulations, lease agreements, environmental mitigation requirements, and voluntary efforts.

3. Water Quality

[Placeholder]

4. Hazardous Waste Management/Site Remediation

[Placeholder]

C. Community Impact Mitigation and Workforce Development

The communities adjacent to the State's goods movement corridors have endured a disproportionate share of the impacts from a system that provides statewide and nationwide benefits. In addition to the air quality and related health impact issues discussed above and in the ARB's Emission Reduction Plan for Ports and International Goods Movement, community impacts include truck traffic, noise, lights and visual blight. In the Phase II process, BTH, Cal/EPA and ARB are conducting meetings in affected communities and reviewing written comments to learn what residents suggest are corrective measures to address these impacts. Chapter IV and Chapter V include Preliminary Candidate Actions in this area.

In addition, the Phase II process is looking at how to best provide goods movement-related job opportunities for area residents in short and long-term positions that afford opportunities for advancement within the goods movement industry.

D. Going Forward Process

The Integrating Work Group will convene on February 24, 2006 to review and comment on the contents of this progress report and will continue to meet during the Spring. To address the issues and concerns of impacted communities, workshops will continue to be held in February and in March. The workshops will take place in various communities in the four goods movement corridors. In June of 2006, the Action Plan will be finalized with specific recommendations for the Governor's consideration.

III. DRAFT FRAMEWORK FOR ACTION

As part of the Goods Movement Action Plan Phase I report, more than $47 billion of prospective infrastructure projects were identified that could improve the capacity or performance of California's four port-to-border goods movement corridors. Many of these proposed projects have received extensive review at the local or regional levels by Metropolitan Planning Organizations (MPOs) or Regional Transportation Planning Authorities (RTPAs) and are included in Regional Transportation Plans (RTPs). The projects undergoing such review follow California's transportation planning process as outlined in Appendix B. However, the conventional transportation planning and review process is not structured to evaluate prospective goods movement projects as changes to a statewide goods movement system. Consequently, project priorities and program funding do not necessarily reflect the project mix that best improves the performance of the goods movement system overall. Similarly, the existing process does not systematically address projects or actions that can mitigate public health and environmental or community impacts that are due to goods movement activity.

It is these deficiencies that the Phase II Action Plan is intended to resolve. Specifically, a statewide perspective enables:

- Assessment of projects as part of a statewide goods movement system.
- Comparison of port, rail, and highway projects in a common framework
- Identification and implementation of critical public health and environmental mitigation and community impact mitigation actions in order to protect public health, and improve the environment and quality of life.
- Prioritization of projects and actions to address the most important needs first.
- Concentration of effort to secure required funding in an orderly fashion.
- Evaluation of performance to determine if state, regional, and community benefits are achieved.

A systematic and transparent "framework for action" is necessary if these benefits are to be achieved. Building the framework on a performance measurement platform provides a means to evaluate, select, and fund candidate projects and actions relative to statewide merit.

The framework is built on a foundation of internally consistent principles aligned with Administration policy. Consistent with a defined set of principles, a series of evaluation criteria are established to judge the merits of prospective projects or actions. Criteria are defined for infrastructure and operational improvements, environmental impact mitigation, community impact mitigation, and public security/safety. Concurrently, performance metrics are established, where appropriate, to quantify and assess outputs and outcomes relative to expectations. Finally, sets of benchmarks are developed, where appropriate, to judge how performance relates to "best-in-class" for comparable projects or actions executed elsewhere.

Developing the principles, evaluation criteria, performance metrics, and benchmarks are challenging tasks when applied to a system as complex as goods movement. The task is compounded by the nature of the system as a series of discrete operations that begin and end outside the State's boundaries. Each segment, whether ocean carrier, port and terminal operator,

trucker, railroad, distribution center, or retailer, attempts to optimize its own operations while accommodating the needs of their upstream and downstream counterparts. Achieving system-wide improvements that result in aggregate performance enhancements requires a high degree of cooperation and accommodation among all the segments of the logistics chain.

Clearly, the development of relevant and meaningful criteria, metrics, and benchmarks for California's goods movement system is an iterative process that will improve as the dynamic behavior of the system and its impacts are better understood. Nonetheless, decisions must be made now based on the best information available. Described below are principles, criteria, metrics, and benchmarks compiled based on input from the stakeholders and subject matter experts of the Integrating Work Group, the supporting work groups, and members of the public that have participated in the Phase II effort to date. Further refinement is expected after the public process early in 2006.

A. Principles for Implementation

The Administration's Goods Movement Policy Statement (see Preface) establishes the basis for a series of principles that define the nature, timing, and manner by which California's goods movement industry and infrastructure will be improved and expanded. Specifically, the policy statement requires that the improvements be undertaken in a manner which will:

- Generate jobs.
- Increase mobility and relieve traffic congestion.
- Improve air quality and protect public health.
- Enhance public and port safety.
- Improve California's quality of life.

Members of the Integrating Work Group suggested a wide range of potential principles. Ultimately, a series of 22 principles were enumerated based in large part on the input from the Work Group. While covering a diverse set of issues, the principles can be grouped under the following five themes:

- Undertake simultaneous and continuous improvement in infrastructure and mitigation.
- Consider the four port-to-border corridors as one integrated system.
- Pursue excellence through technology, efficiency, and workforce development.
- Develop partnerships to advance goals.
- Promote trust, provide for meaningful public participation, and ensure environmental justice consistent with state law.

The full set of principles grouped by these themes is listed below.
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Undertake simultaneous and continuous improvement in infrastructure and mitigation.

1. Approach infrastructure and mitigation actions on a simultaneous and continuous improvement basis. Approach funding and implementation for infrastructure and mitigation on a simultaneous basis. The State's economy and quality of life depend upon the efficient, safe delivery of goods to and from the ports and borders. At the same time, the environmental impacts from goods movement activities must be reduced to ensure protection of public health and the environment. Actions necessary to protect public health and mitigate environmental and community impacts must be funded and executed on a simultaneous and continuous basis. While infrastructure projects may have regional, statewide, or nationwide benefits, local public health, environmental and community impacts must be mitigated.

2. Evaluate infrastructure and public health and environmental/community improvement actions on their merits first without regard to funding sources. Once relative merits are established, consider the practical concerns of funding sources and limitations when determining which choices to select.

3. Advance actions with highest rates of return – both in terms of investment and public health and environmental improvement. Because resources are always limited, ranking actions on a statewide basis relative to their contribution to performance improvement of the entire statewide goods movement system and relative to their potential to improve public health and environmental protection will allow investments to be targeted to actions that advance the highest rates of return in all of these areas.

4. Identify significant public health/environmental and community impacts, provide needed resources and implement strategies to mitigate those impacts. Environmental, public health and community impact mitigation must be fully integrated into goods movement system improvements. The total cost of a good-movement related infrastructure project should include the cost of required project-specific mitigation. Peer-reviewed science should be used in this process. Effort should be made to mitigate the public health/environmental and community impacts at the least cost. However, mitigation strategies must not create localized public heath and environmental impacts. Incentive programs, in addition to regulatory mandates, may help to achieve needed additional improvements.

5. Implement community impact mitigation for existing goods movement facility community impacts on a priority basis (i.e., address the most impacted communities first). The priorities should be based on objective criteria. The existing impacts and health risks at and adjacent to existing goods movement facilities (e.g., in close proximity to ports, railroad yards, high truck volume

freeways and at distribution centers) must be significantly reduced. While community impact mitigation is implemented on a priority basis, the need to ensure environmental justice for all Californians must be kept in mind.

6. Accelerate on a simultaneous basis both action delivery and public health and environmental protection. By their nature, infrastructure actions are long lead-time endeavors that face many obstacles until they are placed into service. Relating the importance of both goods movement actions and public health and environmental improvement to the State's economic well-being will help keep actions on schedule and provide motivation for aggressive action to relieve local communities from unfavorable goods movement-related impacts. "Accelerate (…) action delivery" does not mean weakening environmental review for infrastructure actions.

7. Recognize action benefits within, between, and among goods movement corridors that are otherwise ignored or undervalued. When action merits are evaluated by traditional metrics, the value an action may have to the State at large may not be captured. Primary examples include goods movement actions that can open bottlenecks and increase throughput for an entire transportation corridor or actions that relieve congestion and may also reduce emissions. Properly identifying benefits helps prioritize actions and secure funding for the actions that can do the most good.

8. Consider land use implications in goods movement decisions. Consider goods movement implications in land use decisions. ARB's April 2005 Land Use Handbook, the Business Transportation and Housing Agency's GoCalifornia program, and other sources can aid such analyses.

9. Develop and apply performance metrics for both infrastructure and public health and environmental/community improvement actions. Performance metrics for goods movement projects and mitigation actions provide a comprehensive means to determine the effectiveness of deployed resources.

10. Seek opportunities to promote synergies with other statewide policy initiatives. Active consideration of goods movement issues with statewide initiatives in areas such as housing, health services, land use, agriculture, international trade, economic development, military base re-use, and energy resources promotes good public policy. Most of all, achieving the Administration's purpose will require flexibility, perseverance, and commitment.

Consider the four port-to-border corridors as one integrated system.

11. Consider all goods movement infrastructure and related operations throughout the State as part of one integrated, multi-modal system regardless of funding or ownership (i.e., public, private, or mixed public-private). Such a

perspective highlights improvements that can maximize public benefit, leverage existing assets, encourage private investment, promote stability and diversity, and expand customer choices.

12. Optimize existing capacity and efficiency of operations to right-size the need for expanded infrastructure. Utilizing existing resources to best advantage improves overall cost effectiveness.

13. Avoid changes to one part of the system that damage another part of the system. As an interconnected system, upstream and downstream impacts must be considered when contemplating changes.

14. Maintain adequate infrastructure at the ports capable of receiving, storing and distributing energy fuels. The State's interest in maintaining a reliable energy supply for its people and its economy requires that the specialized needs of delivering energy stocks be considered in land use decisions at the State's ports.

Pursue excellence through technology, efficiency, and workforce development.

15. Utilize the most innovative, effective, and commercially proven technologies available when modifying or expanding California's goods movement system and when reducing associated pollution. Significant investment in emission reduction strategies such as fleet modernization, the use of cleaner fuels, the adoption of cleaner emission control technologies and innovative technologies is necessary in order for California to accommodate the expected growth in goods movement and continue progress in protecting the environment.

16. Educate the public regarding workforce opportunities in the goods movement industry. There is significant job potential in this area. A defined career path and education regarding that career path are needed. Training programs are needed in the neighboring communities for safe and clean jobs. Training programs in California's universities and colleges may also be needed.

Develop partnerships to advance goals.

17. Secure statewide consensus on actions when pursuing federal support. A major factor that causes California to get less than its "fair share" of federal funding is intrastate jockeying for limited federal dollars. Presenting a unified, statewide slate of actions (as most other states do) helps increase the likelihood for the State to receive its fair share allocation.

18. Spur private sector investment and public-private partnerships to leverage public investment. The goods movement system is a complex supply chain of activities and facilities under private, public, and mixed public-private ownership. Gaining consensus on a statewide basis for the major elements

necessary to build out the State's goods movement system helps provide the confidence needed by the private sector to determine how best to make private and public-private investments that add value to the system.

19. Provide a higher-level forum to engage cooperation outside state jurisdiction. California's goods movement system requires cooperation and support from stakeholders who are not subject to California control. These include adjacent states, the federal government, and foreign carriers. In addition, other stakeholders that operate in the State but have national or global operations (including retailers, railroads, and logistics companies) are critical participants in the process. Operating at the State level with these stakeholders improves the State's overall position as compared to merely allowing each region and locality to vie for attention separately.

Promote trust, provide for meaningful public participation, and ensure environmental justice consistent with state law.

20. Promote trust between the state, regional governments, interested parties and stakeholders with respect to the development and implementation of the Goods Movement Action Plan. Trust among stakeholders must be earned and nurtured through constant communication and demonstration that their views and needs are being considered.

21. Solicit and consider public input, including input from communities, before making goods movement and related public health and environmental/ community mitigation decisions. Local communities should be engaged early in the design process to enable the community to participate in that process in a meaningful way.

22. Ensure fair treatment of people of all races, cultures and incomes with respect to the development and implementation of the Goods Movement Action Plan. To ensure fair treatment of all residents in impacted communities, proactive efforts must be undertaken to engage the communities and consider and address community-specific impacts.

B. CRITERIA FOR SELECTION OF PROJECTS AND ACTIONS

Evaluation criteria help determine the relative merits of candidate projects and actions to achieve desired outcomes. Each of the supporting work groups were asked to identify criteria for projects or actions in the respective areas of goods movement infrastructure and operations, public health and environmental mitigation, community impact mitigation, and public safety and homeland security.

While projects can be identified in each area independently, there is more value in developing a portfolio of projects that are mutually reinforcing. This results because projects and actions can provide benefits in multiple areas. For example, grade separation projects not only increase

mobility and relieve traffic congestion but also enhance public safety through reduced accidents, and may improve air quality from reduced idling at rail crossings. For other types of infrastructure projects, specific public health and environmental or community impact mitigation actions might better achieve desired outcomes than stand-alone actions indicated by the criteria.

Following is the current draft version of the criteria for selection of action. More work is needed to refine these criteria.

1. Criteria for Selection of Infrastructure Projects and Operational Improvements

Of all the areas, criteria for goods movement infrastructure and operation improvements are the most specific. This results because the logistics industry has long used three key measures to determine the state of a goods movement system: velocity, throughput, and reliability. These items are described below along with other criteria that should be considered. No single project will meet all the criteria but those listed provide a means to evaluate a candidate projects value.

a. Improves Velocity
In an era of Just in Time (JIT) logistics, the speed at which goods are able to move across the system and arrive on the shelf is crucial. As a criterion for infrastructure improvements, *velocity* refers to this speed of goods delivery. As this plan will demonstrate, there are several means by which velocity in the goods movement system can be increased. Any prospective project should be evaluated on its ability to increase velocity.

b. Increases Throughput
Throughput is an indication of the volume of goods handled by the system. When considering California's seaports, throughput is considered in terms of the number of TEU passing through the port per year. One way to express throughput is in terms of *throughput density. Throughput density* is the annual throughput divided by the size of the terminal.[4] Increasing throughput density can increase throughput without physically expanding the size of the port itself. Throughput density is affected in general terms by the following three parameters:[5] *Static Storage Capacity, Container Dwell Time and Net/Gross Area Ratio*.

Static storage capacity is the number of containers, expressed in TEU that can be physically housed at the port at any given time. Expanding this capacity would contribute to an overall increase in throughput density. *Container dwell time* is the period of time that a container will remain in the port. Actions which shorten this time period would contribute to an overall increase in throughput density. Finally, the *Net/Gross Area Ratio* is the percentage of space at the port that is actually available for storage. "Some terminals have

[4] Sisson, Mark. U.S. CONTAINER TERMINAL THROUGHPUT DENSITY. A report by the JWD group. 2-12-03. Available online at http://www.portofhouston.com/pdf/genifo/POHA-BayportCapacity.pdf. Page 6
[5] Ibid.

features like on-terminal rail yards, break-bulk or RO/RO (roll-on, roll-off) handling, container freight stations (CFS) or other structures that effectively reduce the net/gross ratio."[6] Actions that maximize net space available for cargo storage will increase the *Net/Gross Area Ratio*, thereby improving overall throughput.

c. Improves Reliability
The reliability of the goods movement system is another important piece of this criterion. A proposed action should be evaluated in terms of its potential for increasing reliability. In other words, the project should be judged on its potential to decrease variance. To the logistics industry, the consistency of transportation times is just as valuable as the dimensions of velocity or throughput. Reliability considers all modes of the goods movement industry. Unreliable infrastructure in one segment of the goods movement system will cause bottlenecks and adversely affect other links in the chain. System reliability is directly related to velocity and throughput capacity. Intuitively, increased reliability yields more stability in velocity and throughput.

Velocity, throughput and reliability are generic criteria. Since each terminal is acting on their own business model, there is a limited extent to which these criteria can be applied. Several operational variables such as transshipping or the choice of container stacking versus direct to truck container movements can impact velocity, throughput and reliability. What fits for one terminal may not be a fit for the entire port. Furthermore, as goods leave the ports, they are subject to the limitations at other points in the system.

d. Reduces Congestion
Determining to what extent a project will reduce congestion for both goods movement and non-goods movement (i.e., commuter) traffic is another criterion for project evaluation. As a static system is burdened with an increasing volume of container flow, the natural consequence is increased congestion. General mobility is impacted by the goods movement industry. Increased truck traffic on streets and highways, as well as increased rail trips through non-grade crossings, are directly related to decreased mobility and increased congestion. Projects that reduce congestion not only improve velocity, throughput and reliability, they improve Californians' quality of life. Reduced congestion can also positively affect public health and the environment. *Stop and go* traffic generates more emissions than free flowing traffic[7] and vehicles tend to release more emissions at extremely low speeds or when rapidly accelerating.[8]

e. Reduces Impact on the Community

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[6] Ibid.
[7] Southern California Association of Governments (SCAG). Traffic Congestion and Air Quality. Fall 2005
[8] Federal Highway Administration. A Sampling of Emissions Analysis Techniques for Transportation Control Measures. Prepared by Cambridge Systematics, Inc. Excerpt from section on "Forecasting Approaches." Available online at http://www.fhwa.dot.gov/environment/cmaqeat/index.htm

Among the range of infrastructure projects, some provide relief of previous community impacts because of reconfigurations of land use or other inherent design elements. Projects such as grade separations reduce noise as trains do not have to sound horns at grade crossings.

f. Increases Connectivity
Projects should be evaluated as to their potential to increase connectivity across the goods movement system. As goods move from one mode to another (intermodal) there will be variations in velocity and throughput. Better connectivity lends itself to increased reliability, velocity and throughput system-wide.

g. Considers Innovative Technology
The extent to which projects consider innovative technologies can be a criterion for evaluation. Technology is constantly evolving and projects should be evaluated on the extent to which they consider such innovation. Projects should be long-lasting improvements and should consider the most promising and the most feasible technological advances.

2. Criteria for Selection of Public Health and Environmental Impact Mitigation Actions

Following is a list of criteria for evaluating public health and environmental mitigation actions related to goods movement activities. Which criteria are appropriate in evaluating a particular action will depend on the nature of the action (e.g., does it involve the regulation of a fuel) and the type of action (e.g., regulation, incentive program, voluntary agreement, etc.) For example, air quality measures that will become part of the State Implementation Plan pursuant to the Federal Clean Air Act are subject to specific legal requirements. Incentive programs may be subject to other requirements. In general, however, the criteria below are helpful in evaluating whether a public health and environmental mitigation action should be selected for reducing public health impacts and environmental impacts associated with goods movement.

a. Addresses threat to public health (exposure weighted)
b. Reduces emissions or discharges/runoff
c. Provides immediacy of reductions (or significant reductions for approaches that take longer)
d. Demonstrates technology feasibility
e. Takes advantage of technological developments
f. Promotes alternate fuel use that achieves emission reductions and promotes fuel diversity
g. Delivers cost-effective results relative to a different version of the same action (e.g., measured by $$/ton reduced and/or $$/lives saved)
h. Secures authority for implementation where necessary
i. Demonstrates enforceability

3. Criteria for Selection of Community Impact Mitigation and Workforce Development Actions

Following is a list of criteria for community impact mitigation actions and workforce development actions related to goods movement activities.

Community Impact Mitigation

a. Accommodates community preferences
b. Secures community buy-in
c. Achieves "Like for Like" Mitigation for Impacts related to Public Health (e.g., air pollutant emission reductions to mitigate impacts due to air pollution – not the construction of a community center to mitigate impacts due to air pollution)
d. Optimizes number of residents served and/or benefiting from mitigation action
e. Demonstrates feasibility
f. Fits with available funding
g. Carries potential for multiple benefits (e.g., noise reduction and pollution exposure reduction)
h. Achieves partial or full mitigation
i. Delivers accountability for follow-through
j. Considers noise and light impacts and implements noise and/or light mitigation where needed
k. Considers environmental justice (i.e., fair treatment of people of all races, cultures and incomes with respect to implementation of the Goods Movement Action Plan)

Workforce Development Actions

l. Educates/trains workforce
m. Creates jobs in local community

4. Criteria for Selection of Public Safety and Security Actions

Establishing criteria for the selection of public safety and security actions is deceptively simple. One might conclude that the criteria state: "the action increases public safety and security." Defining the "increases" portion of that criterion is where a more in-depth analysis must be employed. The integrating work group has established that potential actions be evaluated on their meeting of the following criteria:

a. Reinforces or compliments federal, state, and local public safety efforts
b. Does not deteriorate goods movement system performance
c. Increases likelihood of intercepting suspicious or problem containers

C. Metrics for Evaluation after Implementation

The Phase II Goods Movement Action Plan is outcome oriented. Actions are evaluated by the extent to which they achieve the objectives and goals laid out in the Phase I Goods Movement Action Plan. A metric is a standard or unit of measure. Metrics are the means by which outcomes are measured. The metrics and benchmarks in this section of the report are categorized by infrastructure, public health and environmental mitigation, public health, community impact mitigation and public safety/security.

1. Metrics for Infrastructure Projects and Operational Improvements

Velocity and Throughput

The general metric for velocity is distance traveled per unit of time. An infrastructure project should be measured on its ability to maximize distance or minimize time. The velocity increase offered by any single infrastructure project is subordinate to the velocity across the entire intermodal supply chain. Put differently, it is counterproductive to consider increased velocity at one point if a bottleneck is shifted to another point in the system. The general metric for throughput is the volume of goods passing a given point in a given period of time. An infrastructure project that expands the overall system capacity will thereby increase throughput. As with velocity metrics, it is imperative to weigh system-wide throughput resulting from a single project's implementation. The following are multimodal velocity and throughput metrics:

a. Average transit time (multimodal)
b. Train arrival times (ports and rail)
c. Truck turn times inside terminals (ports and trucks)
d. Average container dwell time (ports)
e. Ratio of on dock rail vs. truck loading (ports)
f. TEU by time of day (ports)
g. TEU per quay length (ports)
h. Average processing time for inspected containers (ports)
i. Number of ships waiting for berth (ports)
j. TEUs per acre per year (port)
k. Total TEU capacity (port)
l. TEUs/Year (port)
m. Container movements per hour (port)
n. Average processing time for inspected containers (ports)
o. Crane lifts per hour (ports)
p. Terminal gate moves (ports)
q. Return time of equipment such as containers and chassis (ports)
r. Average terminal dwell time (rail)
s. Intermodal cars on line (rail)[9]
t. Average train speed (rail)[10]
u. Turns per shift - on and off peak (trucks)

[9] National Retail Federation. *Port Tracker: Monthly Port and Intermodal Outlook.* August 2005
[10] US Surface Transportation Board (STB) Railroad Performance Measures.

v. Street and highway capacity (trucks)

Reliability

The general metric for reliability can be considered as the variation in velocity or throughput. An infrastructure project can be evaluated on a metric of reliability to quantify its impact on system variations in velocity and throughput. Consider the analogy of a dartboard where darts represent measurements of throughput and velocity, and the bull's-eye represents the highest benchmark of velocity or throughput. In one scenario, the average distance of all darts from the bull's-eye may be fairly close. However, there are a significant number of outliers, making prediction of the next throw more difficult. In another scenario, the average distance of all darts may be slightly farther from the bull's-eye but they are clustered and there is little difference in placement from one dart to another. The second scenario offers the distinct advantage of increased accuracy in predicting the next throw. In the goods movement system, reliability is useful to all players in regard to the predictability of future velocity and throughput performance. Some examples of such reliability metrics are:

w. Customs availability[11]
x. Equipment constraints[12]
y. Berth availability[13]
z. Pilotage[14]
aa. Towage[15]
bb. Other ship waiting time[16]

2. Metrics for Public Health and Environmental Impact Mitigation

a. Total tons of emissions reduced (NOx, PM, SOx, sulfate, VOC)
b. Percent of mortality risk reduced
c. Percent of cancer risk reduced
d. Ambient pollution measurements within affected communities and in the region

[Continued]

[11] Barber, Daniel and Lisa Grobar. *Implementing a Statewide Goods Movement Strategy and Performance Measurement of Goods Movement in California*. A report for the METRANS Transportation Center. June 29, 2001. Page 13. Definition: the average variation in length of time in which cargo containers clear customs.
[12] Ibid. Definition: how often equipment (chassis) is rejected by truckers, delaying departure of containers from the port.
[13] Hamilton, Clive. Measuring Port Productivity: The Australian Experience. *An invited paper to the Conference in Container Port and Terminal Performance in the Intermodal Chain.* February 3-4, 1999. Page 6. Definition: the proportion of ship arrivals where a berth is available within four hours of the scheduled berthing time.
[14] Ibid. Definition: the proportion of ship movements where pilot service is available within one hour of the confirmed ship arrival/departure time
[15] Ibid. Definition: the proportion of ship movements where towing service is available within one hour of the confirmed ship arrival departure time.
[16] Ibid. Definition: the proportion of ship movements affected by factors other than the unavailability of a berth, pilot or towage causing a delay of an hour or more.

Note: The metrics which follow may provide helpful information, but they need to be evaluated in the context of the total numbers of vehicles, vessels or harbor craft in order to evaluate progress.

e. Number of Vehicles Retired, Retrofitted, Repowered, or Converted to Alternative Fuel
f. Pieces of Equipment Retired, Retrofitted, Repowered, or Converted to Alternative Fuel
g. Number of Frequent Flyer Vessels Retrofitted, Repowered
h. Number of Harbor Craft Retrofitted, Repowered, Replaced or Converted to Alternative Fuel

3. Metrics for Community Impact Mitigation and Workforce Development

a. Project defined with sufficient specificity to proceed
b. Responsible agency/entity identified
c. Funding committed
d. Project initiated
e. Project completed
f. Number of persons newly employed in goods movement industry
g. Number of persons trained to enter goods movement industry
h. Number and type of mitigation actions accomplished by milestone years (e.g., 2010, 2015, 2020)

4. Metrics for Public Safety and Security

a. Reduction in truck accidents/breakdowns
b. Reduction in railway accidents
c. Train accidents per million train-miles[17]
d. Average customs/safety inspection times
e. Percentage of point of origin cargo inspected

D. Benchmarks for Evaluation after Implementation

1. Benchmarks for Infrastructure Projects and Operational Improvements

Benchmarking is "the process of comparing and measuring an organization's own performance on a particular process against the performance of organizations judged to be the best of a comparable industry." [18] However, identifying metrics and benchmarks for the goods movement industry is a challenging and radical undertaking that will surely require further study and discussion. In fact, a recent Waterfront Coalition whitepaper states: "To our knowledge, the

[17] U.S. Department of Transportation. Federal Railroad Administration. *Federal Railroad Administration Action Plan for Addressing Critical Railroad Safety Issues*. May 16, 2005

[18] The Performance Based Management Handbook. Vol 2. 1993 Published by the Performance Based Management Special Interest Group (PBM SIG). Page A-2. PBM SIG is a U.S. Department of Energy (DOE) and DOE contractor funded organization. Available online via the Oak Ridge University website. http://www.orau.gov/pbm

marine terminal industry and the nation's port authorities have not developed any kind of common metrics that provide a true assessment of current capacity. Without this measure, the government and industry are in effect 'flying blind' in terms of knowing how much additional volume of imports and exports can be managed . . ."[19] The material presented in this framework for action will be subject to further scrutiny and investigation. The lack of existing, explicit, and standardized metrics and benchmarks means that this work is provisional and should not be considered as a final and complete action plan.

a. *Market Share*

On the macro level, it is important to evaluate all infrastructure actions in terms of their impact on market share. Market share can be considered a metric of California's national and international competitiveness. The economic advantages associated with the goods movement industry (as noted in the *Phase I Action Plan*) are crucial to California's rank as the sixth largest economy in the world. Identifying benchmarks in throughput is the key to understanding California's market share of the North American goods movement industry.

b. *Velocity and Throughput*

Generally benchmarks are set by the best performers in the industry. In the case of goods movement, it is useful to identify throughput and velocity benchmarks as the levels of productivity at international ports (Table III-3) and other North American ports (Table III-2). In other words, where do California's ports rank in velocity and throughput worldwide? To begin answering this question, one should identify California's current performance (Table III-1). Then as indicated in the following tables, identify some benchmarks set by other ports. Performance can be evaluated as a relative improvement (percentage change) in current velocity and throughput. However, it should be noted that throughput and velocity are linked to many independent variables. For instance, South-East Asian ports conduct a great deal of "transshipping" or container transfer from one sea vessel to another. This factor significantly increases measurements of throughput and velocity because a larger share of containers spends very little if any time on the dock. Perhaps the most valuable use of a throughput benchmark is to gauge market share. For example, in 2004 the market share of California's major ports (as a percentage of total US port TEU throughput) was approximately 40 percent.[20]

[19] Waterfront Coalition. National Marine Container Transportation System: A Call to Action. May 2005. Page 11 *The Waterfront Coalition is a group of concerned business interests representing shippers, transportation providers, and others in the transportation supply chain committed to educate policy makers and the public about the economic importance of U.S. ports and foreign trade, and to promote the most efficient and technologically advanced ports for the twenty-first century*.- from mission statement

[20] American Association of Port Authorities, CALMITSAC, and Port of Los Angeles

Table III-1: California Ports

California Port Throughput[21]	
California's Major Container Ports	*TEUs/Year in 2004. (TEUs, 000s)*
Port of Los Angeles	7,320
Port of Long Beach	5,779
Port of Oakland	2,043
Port of San Diego	92

Table III-2: Top North American Ports

North American Port Throughput Benchmarks[22]	
North American Container Ports	*TEUs/Year in 2004. (TEUs, 000s)*
Los Angeles	7,320
New York/New Jersey	4,478
Long Beach	5,779
Port of Oakland	2,043
Charleston (SC)	1,863
Hampton Roads (VA)	1,808
Tacoma (WA)	1,797
Seattle (WA)	1,775
Vancouver (BC)	1,664
Savannah (GA)	1,662

Table III-3: Top International Ports

International Port Throughput Benchmarks[23]	
Top World Container Ports	*TEUs/Year in 2004. (TEUs, 000s)*
1. Hong Kong	21,930
2. Singapore	21,330
3. Shanghai	14,550
4. Shenzhen	13,660
Los Angeles/Long Beach combined	13,100
5. Bussan	11,430
6. Kaohsiung	9,710
7. Rotterdam	8,220
8. Los Angeles	7,320
9. Hamburg	7,000
10. Dubai	6,420
11. Antwerp	6,060
12. Long Beach	5,780

[21] Ibid.
[22] Ibid.
[23] Ibid.

Reliability
Benchmarks for reliability are difficult to quantify. The highest achievable benchmark would be zero variance or 100 percent consistency. Establishing reliability benchmarks for goods movement requires further study and analysis.

2. Benchmarks for Public Health and Environmental Impact Mitigation

For public health and environmental mitigation actions, the best progress that can be achieved by a particular action is a moving target. New technologies, new fuels new means of retrofits are constantly being developed. The benchmarks (in the form of standards or requirements) are set by the regulating agency based on the facts at the time of the regulatory action.

3. Benchmarks for Community Impact Mitigation and Workforce Development

Community impact mitigation actions by their very nature will be specific to a specific community because the impacts vary from one community to another community. The best possible outcome for one community may not be the best possible outcome for another community. The metrics suggested above for community impact mitigation actions allow for evaluation of actions. Further discussion is needed to determine if a general set of benchmarks should be developed for community impact mitigation actions related to goods movement.

4. Benchmarks for Public Safety and Security

Developing these benchmarks is a task that will require further investigation, expert consultation and extensive research. In her testimony before the U.S Senate Committee on Commerce, Science and Transportation, Margaret T. Wrightson noted that ". . . seaport security efforts, like homeland security efforts in general, lack measurable goals, as well as performance measures to measure progress toward those goals."[24] Establishing actual goods movement public safety and homeland security benchmarks will be an ongoing process.

[24] United States Government Accountability Office (GAO). Testimony Before the Committee on Commerce, Science, and Transportation, U. S. Senate. *MARITIME SECURITY: Enhancements Made,But Implementation and Sustainability Remain Key Challenges.* Statement of Margaret T. Wrightson, Director, Homeland Security and Justice Issues for the GAO.

IV. PRELIMINARY CANDIDATE ACTIONS

The Goods Movement Action Plan Phase I report identified the "why" and the "what" of the state's involvement in goods movement. In so doing, it proffered a wide inventory of infrastructure projects and mitigations within the state's four goods movement corridors. The un-prioritized list of infrastructure projects amounted to approximately $47 billion in infrastructure investment. The report also estimated a cumulative cost of $2-$5 billion for air emission related mitigation actions. (ARB's updated estimate in the first draft of the Emission Reduction is $2.8-$5.6 billion.) Also catalogued were prospective operational changes aimed at improving goods movement and mitigating its negative impacts.

Phase II of the Goods Movement Action Plan was initiated to incorporate public comment and develop a strategy for arriving at a final comprehensive, prioritized, and feasible set of actions to address the issues laid out in Phase I. Based upon input from public meetings, submission of public comment, and work group meetings, additional projects and actions were included in the overall inventory. As outlined in the previous chapter, the work groups (in a transparent and public process) provided input for the development of guiding principles and assessment criteria to provide a framework for evaluating the potential actions.

The Infrastructure Work Group reviewed the list of candidate infrastructure projects and actions against the infrastructure project criteria. As result, the approximately $47 billion list of projects was culled down to the approximately $15.4 billion Preliminary Working list provided in Appendix C and summarized in the Preliminary Candidate Actions tables in this chapter. Concurrently, additional actions and process improvements have now been included.

The development of the draft Preliminary Candidate Actions table herein relied in part on the expert judgment and multi-stakeholder perspectives of the work group members as well as the insightful public comments received throughout. Judgment also was applied to place these projects and actions in a preliminary temporal ranking. In order to give context to the Preliminary Candidate Actions, their selection and implementation timeframe, one must keep in mind the thematic considerations of the 22 guiding principles:

- Undertake simultaneous and continuous improvement in infrastructure and mitigation.
- Consider the four port-to-border corridors as one integrated system.
- Pursue excellence through technology, efficiency, and workforce development
- Develop partnerships to advance goals.
- Promote trust, expand public participation, and pursue environmental justice consistent with state law.

The following state table of Preliminary Candidate Actions is a result of the qualitative process described above and is consistent with the guiding principles. The resulting inventory identifies priority actions in four categories:

- Infrastructure projects and operations.
- Public health and environmental impact mitigation.
- Community impact mitigation and workforce development.

- Public safety and security.

The table organizes the priority actions as noted above and applies a timeframe to designate immediate, short-term, intermediate-term, and long-term actions within each area of focus. The timeframe can be interpreted (roughly) in the following terms:

- Immediate (immediate implementation, generally operational improvements)
- Short-term (0-3 years)
- Intermediate-term (4-10 years)
- Long-term (10+ years)

Actions are assigned to the timeframe based on considerations of complexity and scope. By scanning vertically through the columns of the table, one can identify actions within the same timeframe and across all four categories. Conversely, moving horizontally across the table will reveal actions in the same area of goods movement over the four timeframes. In the consideration of Infrastructure and Operations and Public Health and Environmental Impact Mitigations, there are further delineations within the table that group mode-specific actions.

The Goods Movement Action Plan Phase I: Foundations report identified four "port to border" goods movement corridors:

- Los Angeles/Inland Empire Region
- Bay Area Region
- San Diego/Border Region
- Central Valley Region

Following are the state summary table of Preliminary Candidate Actions and four separate tables that delineate the same actions according to these four goods movement corridors.

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS				
	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Infrastructure and Operations	Operational Improvements Ships ➢ Spread out vessel sailings and arrivals in the trans-Pacific trade ➢ Evaluate short- sea shipping – including environmental impacts ➢ Increase "destination loading" on ships from the far east ➢ Finalize ARB ship auxiliary engine rule (OAL review) Ports ➢ Operate ports during extended hours ➢ Offer incentives to reduce marine terminal dwell time for containers ➢ Expand labor force at the ports ➢ Implement virtual container yards ➢ Implement incentives to limit container dwell time ➢ Finalize ARB intermodal cargo equipment rule (OAL) Rail ➢ Evaluate shuttle train pilot project performance ➢ Utilize more rail for long haul ➢ Finalize ARB intermodal cargo equipment rule (OAL) Trucks ➢ Develop regional or national chassis pools ➢ Establish port-wide terminal appointment systems for truckers Other ➢ Employ better trade and transportation forecasting ➢ Improve communications of fluctuating demand forecast for labor and equipment among carriers, railroads and terminal operators ➢ Enact public-private partnership legislation ➢ Enact design-build and design sequencing legislation	Infrastructure Projects ➢ Construct Alameda Corridor State Route 47 Expressway (includes Schuyler Heim Bridge replacement) ➢ Conduct Environmental Study: Interstate 710 Corridor Improvements (including dedicated truck lanes) ➢ Replace Gerald Desmond Bridge ➢ Construct BNSF "Southern California International Gateway" Near Dock Facility ➢ Complete Union Pacific Near Dock Intermodal Container Transfer Facility ➢ Construct on-dock rail improvements - POLB* ➢ Construct on-dock rail improvements – POLA* ➢ Construct Alameda Corridor East - grade separations, grade crossing improvements (Burlington Northern, Santa Fe and Union Pacific lines) ➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)* ➢ Construct Hegenberger Road to I-980 operational improvements ➢ Construct I-80/I-680/SR 12 interchange improvements, phase II ➢ Reconstruct 7th Street/Union Pacific Grade Separation ➢ Construct outer harbor intermodal terminal at Port of Oakland ➢ Construct State Route 905 Six-Lane Freeway (from Mexico border/Otay Mesa Port of Entry to Interstate 805) ➢ Improve Central Corridor Line	Infrastructure Projects ➢ Construct on-dock rail improvements – POLB* ➢ Construct on-dock rail improvements – POLA* ➢ Construct Alameda Corridor East - grade separations, grade crossing Improvements (Burlington Northern Santa Fe and Union Pacific lines)* ➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)* ➢ Construct truck lanes, SR 14 to Calgrove Blvd. ➢ Construct Colton Crossing BNSF/UP Rail Grade Separation ➢ Construct I-80/I-680/SR 12 Interchange Improvements, Phase III ➢ Construct I-80/I-680/SR 12 Interchange Improvements, Phase IV* ➢ Widen SR 99, 4 to 6 lanes, Goshen to Kingsburg ➢ Widen SR 99,4 to 6 lanes, Prosperity Ave. to Goshen	Infrastructure Projects ➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)* ➢ Construct Interstate 710 Corridor improvements (including dedicated truck lanes) ➢ Construct I-580 Eastbound truck climbing lane ➢ Construct I-580 Westbound truck climbing lane ➢ Construct I-80/I-680/SR 12 Interchange Improvements, Phase IV*

* These infrastructure projects appear in more than one time frame due to the complexity and/or scope of the specific project. See the Preliminary Working List of Proposed Projects in Appendix C for more details.

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS					
		Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Mitigation – Air Quality	Ships	➢ Lobby for ratification of MARPOL Annex 6 for international shipping ➢ Implement vessel speed reduction MOU in Southern California ➢ Finalize ARB ship auxiliary engine rule (i.e., Office of Administrative Law (OAL) review)	➢ Utilize lower sulfur fuel (0.5% by 2007) for marine auxiliary engines ➢ Dedicate cleanest vessels to California service (ongoing) ➢ Increase use of cleaner fuels in ships (ongoing) ➢ Increase use of shore power or alternatives for ships (ongoing) ➢ Expand vessel speed reduction program	➢ Utilize lower sulfur fuel (0.1% by 2010) for ship auxiliary engines ➢ Obtain Sulfur Emission Control Area (SECA) designation ➢ Retrofit existing main engines on ships during major maintenance (ongoing) ➢ Install emission controls on ship main/auxiliary engines of frequent flyers (ongoing) ➢ Continue ongoing strategies	➢ Continue ongoing strategies
	Locomotives	➢ Utilize CA low sulfur diesel for captive instate locomotives ➢ Implement 1998 Railroad MOU for South Coast Air Basin ➢ Implement 2005 Statewide MOU for Rail Yard Risk Reduction	➢ Upgrade engines in switcher locomotives ➢ Retrofit existing locomotive engines with diesel PM controls ➢ Use cleaner fuels in locomotives, particularly for captive fleets and/or new facilities	➢ Implement Tier 3 US standards for line haul locomotives (new engine and rebuild standards) ➢ Implement US low sulfur fuel for interstate locomotives ➢ Concentrate Tier 3 locomotives in California (ongoing)	➢ Continue ongoing strategies
	Trucks	➢ Utilize CA low sulfur diesel for trucks ➢ Conduct smoke inspections for trucks in communities ➢ Enforce 5 minute idling limit for trucks ➢ Accelerate software upgrade for trucks ➢ Implement incentives for cleaner trucks	➢ Modernize (replace and/or retrofit) port trucks (ongoing) ➢ Implement CA/US 2007 truck emission standards ➢ Require international trucks to meet US emission standards ➢ Enforce CA rule for transport refrigeration units on trucks, trains, ships ➢ Enhance enforcement of truck idling limits	➢ Restrict entry of trucks new to port service unless equipped with diesel PM controls ➢ Continue ongoing strategies	➢ Continue ongoing strategies
	Cargo Handling Equipment	➢ Utilize CA low sulfur diesel for equipment ➢ Finalize ARB intermodal cargo equipment rule (i.e., OAL review) ➢ Implement State incentives for cleaner fuels t Ports of Los Angeles and Long Beach	➢ Clean up cargo handling equipment through replacement, retrofit, or alternative fuels (ongoing) ➢ Implement fork lift rule for gas-fired equipment (ongoing) ➢ Require green equipment for goods movement related construction and maintenance	➢ Implement CA/US Tier 4 equipment emission standards ➢ Upgrade cargo handling equipment to 85% diesel PM control or better ➢ Continue ongoing strategies	➢ Increase penetration of zero emission or near zero emission cargo handling equipment ➢ Continue ongoing strategies
	Commercial Harbor Craft	➢ Implement incentives for cleaner harbor craft	➢ Utilize CA low sulfur diesel for harbor craft ➢ Clean up harbor craft through replacement, retrofit, or alternative fuels (ongoing) ➢ Use shore power for harbor craft at dock	➢ Implement new engine standards for harbor craft ➢ Implement incentives to accelerate introduction of new harbor craft engines ➢ Continue ongoing strategies	➢ Continue ongoing strategies

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS				
	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Mitigation – Water Quality	➢ Implement better land use planning and low impact development practices when feasible in the design and construction of infrastructure projects; ➢ Preserve open space to facilitate infiltration for the recharge of aquifers and reduction of storm water runoff; ➢ Minimize land disturbance and impervious cover ➢ Incorporate natural site elements into design	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions
Public Health and Environmental Mitigation – Hazardous Waste Management	[Placeholder]			

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS				
	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development	Note: The actions listed in the Public Health and Environmental Mitigation section will provide significant health benefits to communities adjacent to ports, rail yards, intermodal facilities and highways. Additional general actions include: Strategies ➢ Enforce anti-idling rules ➢ Reroute trucks ➢ Conduct mitigation and pollution prevention ➢ Develop community benefit agreements ➢ Conduct targeted community assessments including monitoring as appropriate ➢ Track emission reductions and estimated cancer risk reduction in communities ➢ Preserve existing parks, open space and natural areas ➢ Coordinate with local city redevelopment departments to identify priority enhancement areas in adjacent communities ➢ Develop and implement community enhancement projects ➢ Emphasize landscaping and aesthetic improvements using local native plants ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues Public Participation ➢ Expand public outreach ➢ Consult community members regarding infrastructure plans throughout the planning process ➢ Establish Community Advisory Committee for the EIR /EIS stage of an infrastructure project (for projects that have not already gone through the environmental review process)	➢ Ongoing implementation of immediate actions ➢ Use green equipment for construction of infrastructure projects (as available) ➢ Establish construction staging areas in locations so as to minimize impact on local circulation ➢ Establish a community forum to address community concerns during construction ➢ When considering operational changes to extend hours (including during construction), evaluate noise and light impacts on adjacent communities ➢ Mitigate noise impacts in adjacent communities ➢ Mitigate light impacts in adjacent communities .	➢ Ongoing implementation of immediate and short-term actions	➢ Ongoing implementation of immediate, short-term, intermediate-term and long-term actions

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS				
	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development, Continued	Public Participation, Continued ➢ Hold public meetings when members of the affected community can attend (e.g., in the evening) ➢ Include language translation where appropriate ➢ Draw on knowledge and experience from the community Land Use Planning ➢ Integrate port and city planning/promote use of buffer zones between ports and surrounding communities Workforce Development		➢ Provide Goods Movement Job Training within Affected Communities	

PRELIMINARY CANDIDATE ACTIONS – SUMMARY FOR FOUR CORRIDORS

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Safety and Security	<u>Operational Improvements, Evaluations and Studies</u> ➢ Establish Foreign Export and Recovery ➢ Establish a Port Security Task Force ➢ Evaluate cross-sectoral vulnerability of ports (power, water, etc) ➢ Evaluate all truck and rail routes out of port districts and air basins to determine long term velocity, security and environmental opportunities ➢ Develop a Federal, State and Local funding strategy ➢ Evaluate the "Agile Port" concept for public safety/homeland security advantages ➢ Use the NAFTA model to understand the public safety and security issues ➢ Evaluate lane departure technology to identify driver fatigue and safety scoring of operators ➢ Continue support and implementation of safety improvement programs ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues	➢ Construct commercial vehicle enforcement facilities around the LA/LB and Oakland ports to enhance highway safety and security ➢ Establish a pilot test program using hazardous materials movement of containers and a short haul rail system that "flushes out" the containers in the ports and rail yards ➢ Develop a pilot project for creating a physical communication grid in the corridor ➢ Use intelligence and automated info to identify and target high-risk containers ➢ Pre-screen high-risk containers at point of departure ➢ Use new detection technology to quickly prescreen ➢ Develop joint inspection stations in the port districts and at the border ➢ Develop community web portal to provide real or near real time information on goods movement and freight mobility conditions across road and rail network within the region ➢ Clear U.S. Customs at inland destinations	➢ Retrofit freight vehicles with probes and smart sensors to measure speed, weather, pollution, lane departure, cargo location, customs data, container RFID information, and vehicle/frame condition inspection dates ➢ Use smarter, tamper-evident containers ➢ Develop a container loading and unloading program (similar to CTPAT) that addresses homeland security issues like peaking for local California businesses	➢ Develop a Green Freight Corridor (similar to Customs Green Lane) program and system ➢ Install sensors and environmental monitoring equipment along corridor to communicate between operators, vehicles, containers and the command center ➢ Establish three integrating centers for all data and system managements at the ports, Mexican border and the Inland Empire using the Metrolink model ➢ Provide data feeds from corridor system to County Emergency center, the Command and Control Center at Camp Pendleton, the CHP command centers, and NORTHCOM ➢ Develop a program that helps local California business (manufacturers, retailers, and wholesalers) capture velocity, congestion, and pollution for their imports and exports

Preliminary Candidate Actions - Los Angeles/Inland Empire Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Infrastructure & Operational Improvements	Ships ➢ Spread out vessel sailings and arrivals in the trans-Pacific trade ➢ Evaluate short- sea shipping – including environmental impacts ➢ Increase "destination loading" on ships from the far east ➢ Finalize ARB ship auxiliary engine rule (OAL review) Ports ➢ Operate ports during extended hours ➢ Offer incentives to reduce marine terminal dwell time for containers ➢ Expand labor force at the ports ➢ Implement virtual container yards ➢ Implement incentives to limit container dwell time ➢ Finalize ARB intermodal cargo equipment rule Rail ➢ Evaluate shuttle train pilot project performance ➢ Utilize more rail for long haul ➢ Finalize ARB intermodal cargo equipment rule Trucks ➢ Develop regional or national chassis pools ➢ Establish port-wide terminal appointment systems for truckers Other ➢ Employ better trade and transportation forecasting ➢ Improve communications of fluctuating demand forecast for labor and equipment across modes ➢ Enact public-private partnership legislation ➢ Enact design-build and design sequencing legislation	➢ Construct Alameda Corridor State Route 47 Expressway (includes Schuyler Heim Bridge replacement) ➢ Conduct Environmental Study: Interstate 710 Corridor Improvements (including dedicated truck lanes) ➢ Replace Gerald Desmond Bridge ➢ Construct BNSF "Southern California International Gateway" Near Dock Facility ➢ Complete Union Pacific Near Dock Intermodal Container Transfer Facility ➢ Construct on-dock rail improvements - POLB* ➢ Construct on-dock rail improvements – POLA* ➢ Construct Alameda Corridor East - grade separations, grade crossing improvements (Burlington Northern, Santa Fe and Union Pacific lines) ➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)*	➢ Construct on-dock rail improvements – POLB* ➢ Construct on-dock rail improvements – POLA* ➢ Construct Alameda Corridor East - grade separations, grade crossing Improvements (Burlington Northern Santa Fe and Union Pacific lines)* ➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)* ➢ Construct truck lanes, SR 14 to Calgrove Blvd. ➢ Construct Colton Crossing BNSF/UP Rail Grade Separation	➢ Improve rail capacity, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)* ➢ Construct Interstate 710 Corridor improvements (including dedicated truck lanes)

.* These infrastructure projects appear in more than one time frame due to the complexity and/or scope of the specific project. See the Preliminary Working List of Proposed Projects in Appendix C for more details.

Preliminary Candidate Actions - Los Angeles/Inland Empire Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health & Environmental Impact Mitigation – Air Quality	➢ Lobby for ratification of MARPOL Annex 6 for international shipping ➢ Implement vessel speed reduction MOU in Southern California ➢ Finalize ARB ship auxiliary engine rule (i.e., OAL review) ➢ Utilize CA low sulfur diesel for captive instate locomotives ➢ Implement 1998 Railroad MOU for South Coast Air Basin ➢ Implement 2005 Statewide MOU for Rail Yard Risk Reduction ➢ Utilize CA low sulfur diesel for trucks ➢ Conduct smoke inspections for trucks in communities ➢ Enforce 5 minute idling limit for trucks ➢ Accelerate software upgrade for trucks ➢ Implement incentives for cleaner trucks ➢ Utilize CA low sulfur diesel for equipment ➢ Implement State incentives for cleaner fuels at Ports of Los Angeles and Long Beach ➢ Finalize ARB intermodal cargo equipment rule (i.e., OAL review) ➢ Implement incentives for cleaner harbor craft	➢ Utilize lower sulfur fuel (0.5% by 2007) for marine auxiliary engines ➢ Dedicate cleanest vessels to California service (ongoing) ➢ Increase use of cleaner fuels in ships (ongoing) ➢ Increase use of shore power or alternatives for ships (ongoing) ➢ Expand vessel speed reduction program ➢ Upgrade engines in switcher locomotives ➢ Retrofit existing locomotive engines with diesel PM controls ➢ Use cleaner fuels in locomotives, particularly for captive fleets and/or new facilities ➢ Modernize (replace and/or retrofit) port trucks (ongoing) ➢ Implement CA/US 2007 truck emission standards ➢ Require international trucks to meet US emission standards ➢ Enforce CA rule for transport refrigeration units on trucks, trains, ships ➢ Enhance enforcement of truck idling limits ➢ Clean up cargo handling equipment through replacement, retrofit, or alternative fuels (ongoing) ➢ Implement fork lift rule for gas-fired equipment (ongoing) ➢ Require green equipment for goods movement related construction and maintenance ➢ Utilize CA low sulfur diesel for harbor craft ➢ Clean up harbor craft through replacement, retrofit, or alternative fuels (ongoing) ➢ Use shore power for harbor craft at dock	➢ Utilize lower sulfur fuel (0.1% by 2010) for ship auxiliary engines ➢ Obtain Sulfur Emission Control Area (SECA) designation ➢ Retrofit existing main engines on ships during major maintenance (ongoing) ➢ Install emission controls on ship main/auxiliary engines of frequent flyers (ongoing) ➢ Implement Tier 3 US standards for line haul locomotives (new engine and rebuild standards) ➢ Implement US low sulfur fuel for interstate locomotives ➢ Concentrate Tier 3 locomotives in California (ongoing) ➢ Restrict entry of trucks new to port service unless equipped with diesel PM controls ➢ Implement CA/US Tier 4 equipment emission standards ➢ Upgrade cargo handling equipment to 85% diesel PM control or better ➢ Implement new engine standards for harbor craft ➢ Implement incentives to accelerate introduction of new harbor craft engines ➢ Continue ongoing strategies	➢ Increase penetration of zero emission or near zero emission cargo handling equipment ➢ Continue ongoing strategies

Preliminary Candidate Actions - Los Angeles/Inland Empire Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Impact Mitigation – Water Quality	➢ Implement better land use planning and low impact development practices when feasible in the design and construction of infrastructure projects; ➢ Preserve open space to facilitate infiltration for the recharge of aquifers and reduction of storm water runoff; ➢ Minimize land disturbance and impervious cover ➢ Incorporate natural site elements into design	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions
Public Health and Environmental Impact Mitigation – Hazardous Waste Management	[Placeholder]			

Preliminary Candidate Actions - Los Angeles/Inland Empire Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development	Note: The actions listed in the Public Health and Environmental Mitigation section will provide significant health benefits to communities adjacent to ports, rail yards, intermodal facilities and highways. Additional general actions include: Strategies ➢ Enforce anti-idling rules ➢ Reroute trucks ➢ Conduct mitigation and pollution prevention ➢ Develop community benefit agreements ➢ Conduct targeted community assessments including monitoring as appropriate ➢ Track emission reductions and estimated cancer risk reduction in communities ➢ Preserve existing parks, open space and natural areas ➢ Coordinate with local city redevelopment departments to identify priority enhancement areas in adjacent communities ➢ Develop and implement community enhancement projects ➢ Emphasize landscaping and aesthetic improvements using local native plants ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues Public Participation ➢ Expand public outreach ➢ Consult community members regarding infrastructure plans throughout the planning process ➢ Establish Community Advisory Committee for the EIR /EIS stage of an infrastructure project (for projects that have not already gone through the environmental review process)	➢ Ongoing implementation of immediate actions ➢ Use green equipment for construction of infrastructure projects (as available) ➢ Establish construction staging areas in locations so as to minimize impact on local circulation ➢ Establish a community forum to address community concerns during construction ➢ When considering operational changes to extend hours (including during construction), evaluate noise and light impacts on adjacent communities ➢ Mitigate noise impacts in adjacent communities ➢ Mitigate light impacts in adjacent communities .	➢ Ongoing implementation of immediate and short-term actions	➢ Ongoing implementation of immediate, short-term, intermediate-term and long-term actions

Preliminary Candidate Actions - Los Angeles/Inland Empire Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development – Continued	Public Participation, Continued ➢ Hold public meetings when members of the affected community can attend (e.g., in the evening) ➢ Include language translation where appropriate ➢ Draw on knowledge and experience from the community Land Use Planning ➢ Integrate port and city planning/promote use of buffer zones between ports and surrounding communities Workforce Development		➢ Provide Goods Movement Job Training within Affected Communities	

Preliminary Candidate Actions - Los Angeles/Inland Empire Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Safety & Security	➢ Establish Foreign Export and Recovery ➢ Establish a Port Security Task Force ➢ Evaluate cross-sectoral vulnerability of ports (power, water, etc) ➢ Evaluate all truck and rail routes out of port districts and air basins to determine long term velocity, security and environmental opportunities ➢ Develop a Federal, State and Local funding strategy ➢ Evaluate the "Agile Port" concept for public safety/homeland security advantages ➢ Use the NAFTA model to understand the public safety and security issues ➢ Evaluate lane departure technology to identify driver fatigue and safety scoring of operator ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues	➢ Construct commercial vehicle enforcement facilities around the LA/LB and Oakland ports to enhance highway safety and security ➢ Establish a pilot test program using hazardous materials movement of containers and a short haul rail system that "flushes out" the containers in the ports and rail yards ➢ Develop a pilot project for creating a physical communication grid in the corridor ➢ Use intelligence and automated info to identify and target high-risk containers ➢ Pre-screen high-risk containers at point of departure ➢ Use new detection technology to quickly prescreen ➢ Develop joint inspection stations in the port districts and at the border ➢ Develop community web portal to provide real or near real time information on goods movement and freight mobility conditions across road and rail network within the region ➢ Clear U.S. Customs at inland destinations	➢ Retrofit freight vehicles with probes and smart sensors to measure speed, weather, pollution, lane departure, cargo location, customs data, container RFID information, and vehicle/frame condition inspection dates ➢ Use smarter, tamper-evident containers ➢ Develop a container loading and unloading program (similar to CTPAT) that addresses homeland security issues like peaking for local California businesses	➢ Develop a Green Freight Corridor (similar to Customs Green Lane) program and system ➢ Install sensors and environmental monitoring equipment along corridor to communicate between operators, vehicles, containers and the command center ➢ Establish three integrating centers for all data and system managements at the ports, Mexican border and the Inland Empire using the Metrolink model ➢ Provide data feeds from corridor system to County Emergency center, the Command and Control Center at Camp Pendleton, the CHP command centers, and NORTHCOM ➢ Develop a program that helps local California business (manufacturers, retailers, and wholesalers) capture velocity, congestion, and pollution for their imports and exports

Preliminary Candidate Actions - Bay Area Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Infrastructure & Operational Improvements	Ships ➢ Spread out vessel sailings and arrivals in the trans-Pacific trade ➢ Evaluate short- sea shipping – including environmental impacts ➢ Increase "destination loading" on ships from the far east ➢ Finalize ARB ship auxiliary engine rule Ports ➢ Operate ports during extended hours ➢ Offer incentives to reduce marine terminal dwell time for containers ➢ Expand labor force at the ports ➢ Implement virtual container yards ➢ Implement incentives to limit container dwell time ➢ Finalize ARB intermodal cargo equipment rule Rail ➢ Evaluate shuttle train pilot project ➢ Utilize more rail for long haul Trucks ➢ Develop regional or national chassis pools ➢ Establish port-wide terminal appointment systems for truckers Other ➢ Employ better trade and transportation forecasting ➢ Improve communications of fluctuating demand forecast for labor and equipment across modes ➢ Enact public-private partnership legislation ➢ Enact design-build and design sequencing legislation	➢ Construct Hegenberger Road to I-980 operational improvements ➢ Construct I-80/I-680/SR 12 interchange improvements, phase II ➢ Reconstruct 7th Street/Union Pacific Grade Separation ➢ Construct outer harbor intermodal terminal at Port of Oakland	➢ Construct I-80/I-680/SR 12 Interchange Improvements, Phase III ➢ Construct I-80/I-680/SR 12 Interchange Improvements, Phase IV	➢ Construct I-580 Eastbound truck climbing lane

Preliminary Candidate Actions - Bay Area Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Impact Mitigation – Air Quality	➢ Lobby for ratification of MARPOL Annex 6 for international shipping ➢ Utilize CA low sulfur diesel for captive instate locomotives ➢ Implement 2005 Statewide MOU for Rail Yard Risk Reduction ➢ Utilize CA low sulfur diesel for trucks ➢ Conduct smoke inspections for trucks in communities ➢ Enforce 5 minute idling limit for trucks ➢ Accelerate software upgrade for trucks ➢ Implement incentives for cleaner trucks ➢ Utilize CA low sulfur diesel for equipment ➢ Implement incentives for cleaner harbor craft	➢ Utilize lower sulfur fuel (0.5% by 2007) for marine auxiliary engines ➢ Dedicate cleanest vessels to California service (ongoing) ➢ Increase use of cleaner fuels in ships (ongoing) ➢ Increase use of shore power or alternatives for ships (ongoing) ➢ Expand vessel speed reduction program ➢ Upgrade engines in switcher locomotives ➢ Retrofit existing locomotive engines with diesel PM controls ➢ Use cleaner fuels in locomotives, particularly for captive fleets and/or new facilities ➢ Modernize (replace and/or retrofit) port trucks (ongoing) ➢ Implement CA/US 2007 truck emission standards ➢ Require international trucks to meet US emission standards ➢ Enforce CA rule for transport refrigeration units on trucks, trains, ships ➢ Enhance enforcement of truck idling limits ➢ Clean up cargo handling equipment through replacement, retrofit, or alternative fuels (ongoing) ➢ Implement fork lift rule for gas-fired equipment (ongoing) ➢ Require green equipment for goods movement related construction and maintenance ➢ Utilize CA low sulfur diesel for harbor craft ➢ Clean up harbor craft through replacement, retrofit, or alternative fuels (ongoing) ➢ Use shore power for harbor craft at dock	➢ Utilize lower sulfur fuel (0.1% by 2010) for ship auxiliary engines ➢ Obtain Sulfur Emission Control Area (SECA) designation ➢ Retrofit existing main engines on ships during major maintenance (ongoing) ➢ Install emission controls on ship main/auxiliary engines of frequent flyers (ongoing) ➢ Implement Tier 3 US standards for line haul locomotives (new engine and rebuild standards) ➢ Implement US low sulfur fuel for interstate locomotives ➢ Concentrate Tier 3 locomotives in California (ongoing) ➢ Restrict entry of trucks new to port service unless equipped with diesel PM controls ➢ Implement CA/US Tier 4 equipment emission standards ➢ Upgrade cargo handling equipment to 85% diesel PM control or better ➢ Implement new engine standards for harbor craft ➢ Implement incentives to accelerate introduction of new harbor craft engines ➢ Continue ongoing strategies	➢ Increase penetration of zero emission or near zero emission cargo handling equipment ➢ Continue ongoing strategies

Preliminary Candidate Actions - Bay Area Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Impact Mitigation – Water Quality	➢ Implement better land use planning and low impact development practices when feasible in the design and construction of infrastructure projects; ➢ Preserve open space to facilitate infiltration for the recharge of aquifers and reduction of storm water runoff ➢ Minimize land disturbance and impervious cover ➢ Incorporate natural site elements into design	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions
Public Health and Environmental Impact Mitigation - Hazardous Waste Management	[Placeholder]			

Preliminary Candidate Actions - Bay Area Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development	Note: The actions listed in the Public Health and Environmental Mitigation section will provide significant health benefits to communities adjacent to ports, rail yards, intermodal facilities and highways. Additional general actions include: Strategies ➢ Enforce anti-idling rules ➢ Reroute trucks ➢ Conduct mitigation and pollution prevention ➢ Develop community benefit agreements ➢ Conduct targeted community assessments including monitoring as appropriate ➢ Track emission reductions and estimated cancer risk reduction in communities ➢ Preserve existing parks, open space and natural areas ➢ Coordinate with local city redevelopment departments to identify priority enhancement areas in adjacent communities ➢ Develop and implement community enhancement projects ➢ Emphasize landscaping and aesthetic improvements using local native plants ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues Public Participation ➢ Expand public outreach ➢ Consult community members regarding infrastructure plans throughout the planning process ➢ Establish Community Advisory Committee for the EIR /EIS stage of an infrastructure project (for projects that have not already gone through the environmental review process)	➢ Ongoing implementation of immediate actions ➢ Use green equipment for construction of infrastructure projects (as available) ➢ Establish construction staging areas in locations so as to minimize impact on local circulation ➢ Establish a community forum to address community concerns during construction ➢ When considering operational changes to extend hours (including during construction), evaluate noise and light impacts on adjacent communities ➢ Mitigate noise impacts in adjacent communities ➢ Mitigate light impacts in adjacent communities	➢ Ongoing implementation of immediate and short-term actions	➢ Ongoing implementation of immediate, short-term, intermediate-term and long-term actions

Preliminary Candidate Actions - Bay Area Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development - Continued	Public Participation, Continued ➢ Hold public meetings when members of the affected community can attend (e.g., in the evening) ➢ Include language translation where appropriate ➢ Draw on knowledge and experience from the community Land Use Planning ➢ Integrate port and city planning/promote use of buffer zones between ports and surrounding communities Workforce Development		➢ Provide Goods Movement Job Training within Affected Communities	

Preliminary Candidate Actions - Bay Area Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Safety & Security	➢ Establish Foreign Export and Recovery ➢ Establish a Port Security Task Force ➢ Evaluate cross-sectoral vulnerability of ports (power, water, etc) ➢ Evaluate all truck and rail routes out of port districts and air basins to determine long term velocity, security and environmental opportunities ➢ Develop a Federal, State and Local funding strategy ➢ Evaluate the "Agile Port" concept for public safety/homeland security advantages ➢ Use the NAFTA model to understand the public safety and security issues ➢ Evaluate lane departure technology to identify driver fatigue and safety scoring of operators ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues	➢ Construct commercial vehicle enforcement facilities around the Oakland port to enhance highway safety and security ➢ Establish a pilot test program using hazardous materials movement of containers and a short haul rail system that "flushes out" the containers in the ports and rail yards ➢ Develop a pilot project for creating a physical communication grid in the corridor ➢ Use intelligence and automated info to identify and target high-risk containers ➢ Pre-screen high-risk containers at point of departure ➢ Use new detection technology to quickly prescreen ➢ Develop joint inspection stations in the port districts and at the border ➢ Develop community web portal to provide real or near real time information on goods movement and freight mobility conditions across road and rail network within the region ➢ Clear U.S. Customs at inland destinations	➢ Retrofit freight vehicles with probes and smart sensors to measure speed, weather, pollution, lane departure, cargo location, customs data, container RFID information, and vehicle/frame condition inspection dates ➢ Use smarter, tamper-evident containers ➢ Develop a container loading and unloading program (similar to CTPAT) that addresses homeland security issues like peaking for local California businesses	➢ Develop a Green Freight Corridor (similar to Customs Green Lane) program and system ➢ Install sensors and environmental monitoring equipment along corridor to communicate between operators, vehicles, containers and the command center ➢ Provide data feeds from corridor system to County Emergency center, the Command and Control Center at Camp Pendleton, the CHP command centers, and NORTHCOM ➢ Develop a program that helps local California business (manufacturers, retailers, and wholesalers) capture velocity, congestion, and pollution for their imports and exports

Preliminary Candidate Actions - San Diego/Border Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Infrastructure & Operational Improvements	Ships ➢ Spread out vessel sailings and arrivals in the trans-Pacific trade ➢ Evaluate short- sea shipping – including environmental impacts ➢ Increase "destination loading" on ships from the far east Ports ➢ Operate ports during extended hours ➢ Offer incentives to reduce marine terminal dwell time for containers ➢ Expand labor force at the ports ➢ Implement virtual container yards ➢ Implement incentives to limit container dwell time Rail ➢ Utilize more rail for long haul Trucks ➢ Develop regional or national chassis pools ➢ Establish port-wide terminal appointment systems for truckers Other ➢ Employ better trade and transportation forecasting ➢ Improve communications of fluctuating demand forecast for labor and equipment across modes ➢ Enact public-private partnership legislation ➢ Enact design-build and design sequencing legislation	➢ Construct State Route 905 Six-Lane Freeway (from Mexico border/Otay Mesa Port of Entry to Interstate 805)		

Preliminary Candidate Actions - San Diego/Border Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health & Environmental Impact Mitigation – Air Quality	➢ Lobby for ratification of MARPOL Annex 6 for international shipping ➢ Finalize ARB ship auxiliary engine rule ➢ Implement vessel speed reduction MOU in Southern California ➢ Utilize CA low sulfur diesel for captive instate locomotives ➢ Implement 2005 Statewide MOU for Rail Yard Risk Reduction ➢ Utilize CA low sulfur diesel for trucks ➢ Conduct smoke inspections for trucks in communities ➢ Enforce 5 minute idling limit for trucks ➢ Accelerate software upgrade for trucks ➢ Implement incentives for cleaner trucks ➢ Utilize CA low sulfur diesel for equipment ➢ Finalize ARB intermodal cargo equipment rule ➢ Implement incentives for cleaner harbor craft	➢ Utilize lower sulfur fuel (0.5% by 2007) for marine auxiliary engines ➢ Dedicate cleanest vessels to California service (ongoing) ➢ Increase use of cleaner fuels in ships (ongoing) ➢ Increase use of shore power or alternatives for ships (ongoing) ➢ Expand vessel speed reduction program ➢ Upgrade engines in switcher locomotives ➢ Retrofit existing locomotive engines with diesel PM controls ➢ Use cleaner fuels in locomotives, particularly for captive fleets and/or new facilities ➢ Modernize (replace and/or retrofit) port trucks (ongoing) ➢ Implement CA/US 2007 truck emission standards ➢ Require international trucks to meet US emission standards ➢ Enforce CA rule for transport refrigeration units on trucks, trains, ships ➢ Enhance enforcement of truck idling limits ➢ Clean up cargo handling equipment through replacement, retrofit, or alternative fuels (ongoing) ➢ Implement fork lift rule for gas-fired equipment (ongoing) ➢ Require green equipment for goods movement related construction and maintenance ➢ Utilize CA low sulfur diesel for harbor craft ➢ Clean up harbor craft through replacement, retrofit, or alternative fuels (ongoing) ➢ Use shore power for harbor craft at dock	➢ Utilize lower sulfur fuel (0.1% by 2010) for ship auxiliary engines ➢ Obtain Sulfur Emission Control Area (SECA) designation ➢ Retrofit existing main engines on ships during major maintenance (ongoing) ➢ Install emission controls on ship main/auxiliary engines of frequent flyers (ongoing) ➢ Implement Tier 3 US standards for line haul locomotives (new engine and rebuild standards) ➢ Implement US low sulfur fuel for interstate locomotives ➢ Concentrate Tier 3 locomotives in California (ongoing) ➢ Restrict entry of trucks new to port service unless equipped with diesel PM controls ➢ Implement CA/US Tier 4 equipment emission standards ➢ Upgrade cargo handling equipment to 85% diesel PM control or better ➢ Implement new engine standards for harbor craft ➢ Implement incentives to accelerate introduction of new harbor craft engines ➢ Continue ongoing strategies	➢ Increase penetration of zero emission or near zero emission cargo handling equipment ➢ Continue ongoing strategies

Preliminary Candidate Actions - San Diego/Border Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Impact Mitigation – Water Quality	➢ Implement better land use planning and low impact development practices when feasible in the design and construction of infrastructure projects; ➢ Preserve open space to facilitate infiltration for the recharge of aquifers and reduction of storm water runoff ➢ Minimize land disturbance and impervious cover ➢ Incorporate natural site elements into design	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions
Public Health and Environmental Impact Mitigation - Hazardous Waste Management	[Placeholder]			

Preliminary Candidate Actions - San Diego/Border Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development	Note: The actions listed in the Public Health and Environmental Mitigation section will provide significant health benefits to communities adjacent to ports, rail yards, intermodal facilities and highways. Additional general actions include: Strategies ➢ Enforce anti-idling rules ➢ Reroute trucks ➢ Conduct mitigation and pollution prevention ➢ Develop community benefit agreements ➢ Conduct targeted community assessments including monitoring as appropriate ➢ Track emission reductions and estimated cancer risk reduction in communities ➢ Preserve existing parks, open space and natural areas ➢ Coordinate with local city redevelopment departments to identify priority enhancement areas in adjacent communities ➢ Develop and implement community enhancement projects ➢ Emphasize landscaping and aesthetic improvements using local native plants ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues Public Participation ➢ Expand public outreach ➢ Consult community members regarding infrastructure plans throughout the planning process ➢ Establish Community Advisory Committee for the EIR /EIS stage of an infrastructure project (for projects that have not already gone through the environmental review process)	➢ Ongoing implementation of immediate actions ➢ Use green equipment for construction of infrastructure projects (as available) ➢ Establish construction staging areas in locations so as to minimize impact on local circulation ➢ Establish a community forum to address community concerns during construction ➢ When considering operational changes to extend hours (including during construction), evaluate noise and light impacts on adjacent communities ➢ Mitigate noise impacts in adjacent communities ➢ Mitigate light impacts in adjacent communities	➢ Ongoing implementation of immediate and short-term actions	➢ Ongoing implementation of immediate, short-term, intermediate-term and long-term actions

Preliminary Candidate Actions - San Diego/Border Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development – Continued	Public Participation, Continued ➢ Hold public meetings when members of the affected community can attend (e.g., in the evening) ➢ Include language translation where appropriate ➢ Draw on knowledge and experience from the community Workforce Development		➢ Provide Goods Movement Job Training within Affected Communities	

Preliminary Candidate Actions - San Diego/Border Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Safety & Security	➢ Establish Foreign Export and Recovery ➢ Establish a Port Security Task Force ➢ Evaluate cross-sectoral vulnerability of ports (power, water, etc) ➢ Evaluate all truck and rail routes out of port districts and air basins to determine long term velocity, security and environmental opportunities ➢ Develop a Federal, State and Local funding strategy ➢ Evaluate the "Agile Port" concept for public safety/homeland security advantages ➢ Use the NAFTA model to understand the public safety and security issues ➢ Evaluate lane departure technology to identify driver fatigue and safety scoring of operators ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues	➢ Construct commercial vehicle enforcement facilities around the San Diego port to enhance highway safety and security ➢ Establish a pilot test program using hazardous materials movement of containers and a short haul rail system that "flushes out" the containers in the ports and rail yards ➢ Develop a pilot project for creating a physical communication grid in the corridor ➢ Use intelligence and automated info to identify and target high-risk containers ➢ Pre-screen high-risk containers at point of departure ➢ Use new detection technology to quickly prescreen ➢ Develop joint inspection stations in the port districts and at the border ➢ Develop community web portal to provide real or near real time information on goods movement and freight mobility conditions across road and rail network within the region ➢ Clear U.S. Customs at inland destinations	➢ Retrofit freight vehicles with probes and smart sensors to measure speed, weather, pollution, lane departure, cargo location, customs data, container RFID information, and vehicle/frame condition inspection dates ➢ Use smarter, tamper-evident containers ➢ Develop a container loading and unloading program (similar to CTPAT) that addresses homeland security issues like peaking for local California businesses	➢ Develop a Green Freight Corridor (similar to Customs Green Lane) program and system ➢ Install sensors and environmental monitoring equipment along corridor to communicate between operators, vehicles, containers and the command center ➢ Establish three integrating centers for all data and system managements at the ports, Mexican border and the Inland Empire using the Metrolink model ➢ Provide data feeds from corridor system to County Emergency center, the Command and Control Center at Camp Pendleton, the CHP command centers, and NORTHCOM ➢ Develop a program that helps local California business (manufacturers, retailers, and wholesalers) capture velocity, congestion, and pollution for their imports and exports

Preliminary Candidate Actions - Central Valley Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Infrastructure & Operational Improvements	➢ Improve communications of fluctuating demand forecast for labor and equipment across modes ➢ Enact public-private partnership legislation ➢ Enact design-build and design sequencing legislation ➢ Finalize ARB ship auxiliary engine rule (i.e., OAL review) ➢ Finalize ARB intermodal cargo equipment rule (i.e., OAL review)	➢ Central Corridor Double Track, Tunnels Modification	➢ Widen SR 99, 4 to 6 lanes, Goshen to Kingsburg ➢ Widen SR 99,4 to 6 lanes, Prosperity Ave. to Goshen	➢ Construct I-580 Westbound truck climbing lane

Preliminary Candidate Actions - Central Valley Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health & Environmental Impact Mitigation – Air Quality	➢ Lobby for ratification of MARPOL Annex 6 for international shipping ➢ Finalize ARB ship auxiliary engine rule (i.e., OAL review) ➢ Utilize CA low sulfur diesel for captive instate locomotives ➢ Implement 2005 Statewide MOU for Rail Yard Risk Reduction ➢ Utilize CA low sulfur diesel for trucks ➢ Conduct smoke inspections for trucks in communities ➢ Enforce 5 minute idling limit for trucks ➢ Accelerate software upgrade for trucks ➢ Implement incentives for cleaner trucks ➢ Utilize CA low sulfur diesel for equipment ➢ Finalize ARB intermodal cargo equipment rule (i.e., OAL review) ➢ Implement incentives for cleaner harbor craft	➢ Utilize lower sulfur fuel (0.5% by 2007) for marine auxiliary engines ➢ Dedicate cleanest vessels to California service (ongoing) ➢ Increase use of cleaner fuels in ships (ongoing) ➢ Increase use of shore power or alternatives for ships (ongoing) ➢ Upgrade engines in switcher locomotives ➢ Retrofit existing locomotive engines with diesel PM controls ➢ Use cleaner fuels in locomotives, particularly for captive fleets and/or new facilities ➢ Modernize (replace and/or retrofit) port trucks (ongoing) ➢ Implement CA/US 2007 truck emission standards ➢ Require international trucks to meet US emission standards ➢ Enforce CA rule for transport refrigeration units on trucks, trains, ships ➢ Enhance enforcement of truck idling limits ➢ Clean up cargo handling equipment through replacement, retrofit, or alternative fuels (ongoing) ➢ Implement fork lift rule for gas-fired equipment (ongoing) ➢ Require green equipment for goods movement related construction and maintenance ➢ Utilize CA low sulfur diesel for harbor craft ➢ Clean up harbor craft through replacement, retrofit, or alternative fuels (ongoing) ➢ Use shore power for harbor craft at dock	➢ Utilize lower sulfur fuel (0.1% by 2010) for ship auxiliary engines ➢ Obtain Sulfur Emission Control Area (SECA) designation ➢ Retrofit existing main engines on ships during major maintenance (ongoing) ➢ Install emission controls on ship main/auxiliary engines of frequent flyers (ongoing) ➢ Implement Tier 3 US standards for line haul locomotives (new engine and rebuild standards) ➢ Implement US low sulfur fuel for interstate locomotives ➢ Concentrate Tier 3 locomotives in California (ongoing) ➢ Restrict entry of trucks new to port service unless equipped with diesel PM controls ➢ Implement CA/US Tier 4 equipment emission standards ➢ Upgrade cargo handling equipment to 85% diesel PM control or better ➢ Implement new engine standards for harbor craft ➢ Implement incentives to accelerate introduction of new harbor craft engines ➢ Continue ongoing strategies	➢ Increase penetration of zero emission or near zero emission cargo handling equipment ➢ Continue ongoing strategies

Preliminary Candidate Actions - Central Valley Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Public Health and Environmental Impact Mitigation – Water Quality	➢ Implement better land use planning and low impact development practices when feasible in the design and construction of infrastructure projects; ➢ Preserve open space to facilitate infiltration for the recharge of aquifers and reduction of storm water runoff ➢ Minimize land disturbance and impervious cover ➢ Incorporate natural site elements into design	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions	➢ Ongoing implementation of immediate actions
Public Health and Environmental Impact Mitigation – Hazardous Waste Management	[Placeholder]			

Preliminary Candidate Actions - Central Valley Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development	Note: The actions listed in the Public Health and Environmental Mitigation section will provide significant health benefits to communities adjacent to ports, rail yards, intermodal facilities and highways. Additional general actions include: Strategies ➢ Enforce anti-idling rules ➢ Reroute trucks ➢ Conduct mitigation and pollution prevention ➢ Develop community benefit agreements ➢ Conduct targeted community assessments including monitoring as appropriate ➢ Track emission reductions and estimated cancer risk reduction in communities ➢ Preserve existing parks, open space and natural areas ➢ Coordinate with local city redevelopment departments to identify priority enhancement areas in adjacent communities ➢ Develop and implement community enhancement projects ➢ Emphasize landscaping and aesthetic improvements using local native plants ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues Public Participation ➢ Expand public outreach ➢ Consult community members regarding infrastructure plans throughout the planning process ➢ Establish Community Advisory Committee for the EIR /EIS stage of an infrastructure project (for projects that have not already gone through the environmental review process)	➢ Ongoing implementation of immediate actions ➢ Use green equipment for construction of infrastructure projects (as available) ➢ Establish construction staging areas in locations so as to minimize impact on local circulation ➢ Establish a community forum to address community concerns during construction ➢ When considering operational changes to extend hours (including during construction), evaluate noise and light impacts on adjacent communities ➢ Mitigate noise impacts in adjacent communities ➢ Mitigate light impacts in adjacent communities	➢ Ongoing implementation of immediate and short-term actions	➢ Ongoing implementation of immediate, short-term, intermediate-term and long-term actions

Preliminary Candidate Actions - Central Valley Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
Community Impact Mitigation and Workforce Development – Continued	Public Participation, Continued ➢ Hold public meetings when members of the affected community can attend (e.g., in the evening) ➢ Include language translation where appropriate ➢ Draw on knowledge and experience from the community Workforce Development		➢ Provide Goods Movement Job Training within Affected Communities	

Preliminary Candidate Actions - Central Valley Goods Movement Corridor

	Immediate Actions	Short-Term Actions (0-3 years)	Intermediate-Term Actions (4-10 years)	Long-Term Actions (more than 10 yrs)
	➢ Develop a Federal, State and Local funding strategy ➢ Use the NAFTA model to understand the public safety and security issues ➢ Evaluate lane departure technology to identify driver fatigue and safety scoring of operators ➢ Increase enforcement of traffic and vehicle safety laws and regulations ➢ Increase public and trucker education on safety and neighborhood issues	➢ Develop a pilot project for creating a physical communication grid in the corridor ➢ Develop community web portal to provide real or near real time information on goods movement and freight mobility conditions across road and rail network within the region	➢ Retrofit freight vehicles with probes and smart sensors to measure speed, weather, pollution, lane departure, cargo location, customs data, container RFID information, and vehicle/frame condition inspection dates ➢ Use smarter, tamper-evident containers ➢ Develop a container loading and unloading program (similar to CTPAT) that addresses homeland security issues like peaking for local California businesses	➢ Develop a Green Freight Corridor (similar to Customs Green Lane) program and system ➢ Install sensors and environmental monitoring equipment along corridor to communicate between operators, vehicles, containers and the command center ➢ Provide data feeds from corridor system to County Emergency center, the Command and Control Center at Camp Pendleton, the CHP command centers, and NORTHCOM ➢ Develop a program that helps local California business (manufacturers, retailers, and wholesalers) capture velocity, congestion, and pollution for their imports and exports

V. ACCOUNTABILITY - SIMULTANEOUS AND CONTINUOUS IMPROVEMENT

A. Background

As noted in the policy statement that appears prior to the Executive Summary, the State's economy and quality of life depend upon the efficient, safe delivery of goods to and from our ports and borders. At the same time, the environmental impacts from goods movement activities must be reduced to ensure protection of public health. Consistent with these policy statements, and as set forth on Page III-3, the first Goods Movement Action Plan principle is:

> Approach infrastructure and mitigation actions on a simultaneous and continuous improvement basis. Approach funding and implementation for infrastructure and mitigation on a simultaneous basis.

This section explains how implementation of this fundamental principle will be evaluated.

B. Elements to Achieve Simultaneous and Continuous Improvement

The elements to achieve simultaneous and continuous improvement for public health and environmental mitigation will be:

1) Ongoing implementation of existing air quality programs, including the mobile source emission reduction measures set forth in the State Implementation Plan and subsequent program modifications;

2) Implementation of ARB's new and extensive Emission Reduction Plan for Ports and International Goods Movement; and

3) Infrastructure project compliance with the California Environmental Quality Act, including analysis of emissions impact and quantification of any emission reduction benefits.

C. Verification of Simultaneous and Continuous Improvement

In order to ensure protection of public health, verification that the planned emission reductions are occurring as planned will be performed. As the Secretaries of BTH and Cal/EPA review and revise the Goods Movement Action Plan periodically, the Air Resources Board will evaluate for each of the four goods movement corridors, on a corridor-by-corridor basis, whether the emission reductions included in the ARB's Emission Reduction Plan have occurred. The first review, in 2008, will assess progress towards implementing plan strategies needed to meet the ARB 2010 target. Subsequent progress assessments will use the 2010, 2015, and 2020 milestone reduction targets as the performance benchmark. ARB will update regional emission inventories and do an accounting of emission reductions for each corridor. Through Caltrans, BTH will report on the status of emission reductions achieved through infrastructure projects using the air quality analysis prepared for compliance with CEQA as the reference point. Any emissions benefits calculated for these projects will be incorporated into the accounting of emissions

reductions achieved for the region. The agencies plan on conducting these evaluations according to the following schedule:

EMISSIONS INVENTORY YEAR (ARB)	SIMULTANEOUS & CONTINUOUS IMPROVEMENT EVALUATION YEAR
2007	2008
2010	2011
2015	2016
2020	2021

The agencies will provide the results of the analyses for public review in each corridor. For the corridor in question, the evaluation could result in one of three outcomes:

1) SCENARIO 1: All the emission reductions planned for goods movement sources under the Emission Reduction Plan to be achieved by the end of the emissions inventory year in question have been achieved (i.e., simultaneous and continuous improvement has been verified) in the particular corridor.

2) SCENARIO 2: 80% or more of the emission reductions (but not all of the emission reductions) planned for goods movement sources under the Emission Reduction Plan have been achieved by the end of the emission inventory year in question in the particular corridor;

3) SCENARIO 3: less than 80% of the emission reductions planned for goods movement sources under the Emission Reduction Plan have been achieved by the end of the emissions inventory year in question in the particular corridor.

D. Accountability – Ramifications where Simultaneous and Continuous Improvement is Not Verified

The ramifications where simultaneous and continuous improvement is not verified will be as follows:

1) SCENARIO 2: For a corridor where the evaluation of the new emissions inventory shows achievement of 80% or more of the emission reductions planned for goods movement sources for the inventory year in question (but not all of the emission reductions), new strategies will be developed to correct the shortfall by the next milestone year or no later than 2 years after the 2020 milestone.

2) SCENARIO 3: For a corridor where the evaluation of the new emission inventory shows achievement of less than 80% of the emission reductions

planned for goods movement sources for the inventory year in question, allocation of infrastructure bond funding for infrastructure projects in that corridor would be limited to those projects with significant emission reduction benefits until the next such evaluation indicated Scenario 1 or Scenario 2 status for that corridor.

E. Community Impact Mitigation

The preliminary action recommendations in this document include recommendations for actions to mitigate community impacts. To assist in the achievement of simultaneous and continuous improvement in the area of community impact mitigation, the following criteria will be applied to the allocation of bond funds for goods movement infrastructure projects (in addition to other applicable criteria).

1. Community Advisory Committee

In order to obtain infrastructure bond funding for a goods movement infrastructure project that is in a regional transportation plan and has not gone through the environmental review process, that project must have a Community Advisory Committee similar to that in the I-710 process.

2. Air Quality Monitoring

In order to obtain infrastructure bond funding for a goods movement infrastructure project, the proponent of the project, either alone or with a third party, must fund air particulate matter monitoring and monitoring for relevant toxic air pollutants to be implemented by the local or regional air district. This requirement does not apply if such monitoring is already in operation in close proximity to the project. The purpose of the monitoring would be to track air quality progress and trends at the community level. This would help ensure that air quality progress is made in all communities throughout a region.

VI. FUNDING

A. Innovative Finance and Alternative Funding Work Group

The Innovative Finance and Alternative Funding Work Group was assigned the primary task of identifying goods movement financing issues of statewide concern and recommending alternative financing options and innovative financing mechanisms that should be considered and applied in the development of goods movement projects. To complement its primary task, the group was also charged with identifying legislative and regulatory actions that would be required to implement their final recommendation. The California Infrastructure and Economic Development Bank (I-Bank) provided the personnel to complete the analytical work required to support the work group.

B. Goods Movement Funding in the Governor's Strategic Growth Plan

The Governor's Strategic Growth Plan includes general obligation bond funding for goods movement infrastructure improvement and goods movement-related air quality mitigation. Specifically, general obligation bonds would generate stimulate $15 billion of infrastructure investment and $2 billion for air quality improvements. This level of investment would be achieved from:

1) $3 billion for goods movement infrastructure improvement that improves the flow of goods and enhances environmental quality. The proposal would require that those funds be matched 1:4 with matching funds from private funds or from other appropriate local or federal funds;

2) $1 billion for clean air projects related to goods movement. The proposal would require that those funds be matched with $1 billion in total matching funds from private funds or from other appropriate local or federal funds.

Discussions are ongoing at the Legislature at this writing regarding the Strategic Growth Plan.

C. Potential Revenue Sources for Infrastructure Projects

Regardless of the mechanism used to finance the construction of an infrastructure project, a defined source of funds must be identified and committed to the project. Funding is the common thread that ties all infrastructure projects together and is often the biggest hurdle to project fruition. In this context, "financing" is the mechanism used to borrow money to pay for the current cost of construction or acquisition of an infrastructure project. "Funding" is the revenue source (e.g., taxes, user fees, or tolls) that is used to repay the loan.

The following two tables describe major funding sources at the federal and local government levels that may be used to pay for projects directly or repay bonds, loans and other investments.

Table VI-1: Federal Funding Sources

SOURCE	DESCRIPTION
FEDERAL	
Federal Excise Fuel Tax	There is a federal excise tax placed on each gallon of fuel purchased; the proceeds of which go to the Highway Trust Fund, the Mass Transit Account, and the Leaking Underground Storage Tank Trust Fund. Roughly 80 percent of revenues go to the Highway Account and 20 percent are deposited into the Mass Transit Account and 0.1 percent of total supports the Leaking Underground Storage Tank Trust Fund. In California, the federal excise tax is 15.4 cents in areas where ethanol-blended gasoline is used (80% of California) and 18.4 cents per gallon of gasoline without ethanol. In addition 24.4 cents per gallon on diesel fuel is collected. Ethanol-blended gasoline is used in non-attainment areas in Southern California, the Sacramento Metropolitan Area, and the San Joaquin Valley, accounting for over 80 percent of all gasoline used in the state. The remaining 20 percent is subject to the full 18.4-cent/gallon federal tax. An excise tax is a charge on the production of non-essential goods To appropriate the excise tax this year, Congress passed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) which is the $244.1 billion federal transportation authorization bill that became effective on August 10, 2005. SAFETEA-LU continues the Transportation Equity Act for the 21st Century (TEA-21) concept of guaranteed funding, keyed to Highway Trust Fund (Highway Account) receipts.
U.S. Customs Revenues	Customs duties are paid by manufacturers, retailers, and wholesalers and can be passed on to customers. Customs revenue generally flows into the general fund of the U.S. Treasury to cover other federal expenses. It is hoped that California might recoup a portion of the custom fee paid to cover the cost of moving goods through the state.

Diesel Truck Retrofit And Fleet Modernization Program.	Section 742 of the Energy Policy Act of 2005 (HR 6) provides that the Secretary of Energy shall establish a program for awarding grants on a competitive basis to public agencies and entities for fleet modernization programs including installation of retrofit technologies for diesel trucks. There are authorized to be appropriated to carry out this section, to remain available until expended the following sums: (1) $20,000,000 for fiscal year 2006. (2) $35,000,000 for fiscal year 2007. (3) $45,000,000 for fiscal year 2008. (4) Such sums as are necessary for each of fiscal years 2009 and 2010

Table VI-2: State Funding Sources

SOURCE	DESCRIPTION
STATE	
State Fuel Excise Tax	The State of California levies an 18 cent per gallon tax on gasoline and diesel fuel. This is the primary source of state funding dedicated for transportation. These excise taxes generate about $3 billion per year, about 65 percent of which goes to the State Highway Account. The remaining 35 percent is allocated to cities and counties (local subvention) for street and road purposes. In addition, a portion of the funds in the State Highway Account is allocated to Regional Transportation Improvement Programs.
State Sales Tax on Gasoline and Diesel Fuel	The State of California applies a sales tax to the sale of gasoline. The sales tax is levied on the full price of gasoline, including state and federal excise taxes. The sales tax on gasoline consists of 6 percent state sales tax and 1.25 percent county sales tax, plus additional local sales which vary by jurisdiction. Since the early 1970s, a small amount of the state sales tax on gasoline and the state portion of sales tax on diesel fuel have been used to provide state funding for public transit. The money, deposited in the Public Transportation Account, is equally divided for intercity passenger rail and local/regional transit. In 2000, the Traffic Congestion Relief Act dedicated the state's portion of the sales tax on gasoline to transportation purposes for a defined period of time. Proposition 42, approved in March 2002, made this provision permanent and placed it in the State Constitution.
Truck Weight Fees	User fees assessed and collected by the State based on the declared weight of a truck. This is a major source of revenue to the State Highway Account.

Table VI-3: Local Funding Sources

SOURCE	DESCRIPTION
LOCAL	
Local Sales Tax	Since 1984, most urban counties in the state, and a few rural counties, have adopted local voter-approved sales taxes dedicated to transportation programs. Typically, the funding mix approved by voters includes about one-fourth of the proceeds for transit, one third for local streets and roads maintenance, and the balance for major highway improvements. The amount dedicated collectively for state highway improvements has come to provide nearly fifty percent of the new capacity improvements to the state system. Article XIIIB of the California Constitution provides the authority and requirements for the imposition of local sales tax measures subject to voter approval.
OTHER	
Tolls	Fee assessed for the use of infrastructure. Toll roads and bridges are the most common form of infrastructure where users are charged for their use of the facility.
User Fees	Fees can be assessed for the use of infrastructure either directly or indirectly. Fees could be charged by users of port and freight movement corridors. Examples: 1. The Alameda Corridor charges "User Fees" and "Container Fees": User fees are triggered whenever a container is loaded/unloaded and transported by rail to/from a port facility or uses the Alameda Corridor. Container charges are applied to all loaded water-borne containers transported by rail to/from a rail ramp in a 10 county Southern California Region, provided the container passes trough the San Pedro Bay Ports, but is neither loaded at a port facility nor transported over the Corridor. 2. Pierpass is a non-profit corporation created to collect container fees on goods moved through some California ports. The container fee is collected only during the peak daytime hours between 3AM and 6PM Monday through Friday. The collected funds pay for the port's new extended hours of operation.

1. Means of Reducing Infrastructure Project Costs

It is also important to identify ways in which infrastructure project delivery can be expedited and costs reduced, without weakening the environmental review process. To this end, public private partnerships, design-build, and design-sequencing are all critical tools.

"Public-private partnerships have the potential to play a significant role in providing a real solution to the problem of congestion. Public-private partnerships can provide additional sources of funding that may allow needed transportation projects to be built."[25] Benefits of public private partnerships include:

- Savings of time and money through innovative ways to finance and construct transportation infrastructure projects.
- More efficient allocation of risks between the public sector and the private sector.
- More effective pricing of current and future transportation infrastructure projects so that the public use is more efficient.[26]

Design-build authority would allow the state to contract with one entity to deliver a project from initial design and engineering to completion of project construction. Rather than delaying all construction until design of the entire project has been completed, design-sequencing allows construction to commence when the design of each phase of a project is completed. These tools can safely deliver projects with significant time and cost savings, while adhering to the environmental review process.

D. Funding Tools for Public Health and Environmental Mitigation

ARB's Emission Reduction Plan for Ports and International Goods Movement estimates the cost of the goods movement-related strategies at $2.8 to $5.6 billion over 15 years (in present value dollars) and the benefits at approximately $23 billion. The options for paying for these costs include:

1. traditional regulations (where the owner/operator pays for the cost of compliance)
2. incentives
3. General Obligation Bonds in the form of incentives or other subsidies;
4. federal funding
5. user-based fees
6. market-based approaches

[25] Federal Highway Administration, US Department of Transportation. *MANUAL FOR USING PUBLIC-PRIVATE PARTNERSHIPS ON HIGHWAY PROJECTS*. November 2005. Available online at http://www.fhwa.dot.gov/ppp/
[26] Ibid.

1. Regulations

In general, ARB staff presumes that traditional regulations (which place the costs of control on the owners and operators of the polluting sources) will provide the vast majority of progress needed to protect public health and attain ambient air quality standards. But air pollution from ports and goods movement raises some special issues. For example, the economic viability of some of the sources (like an owner with a single port truck or a single commercial fishing vessel) creates a situation where financial assistance may be essential to support the needed upgrade to cleaner equipment. Additionally federal restrictions on state regulation of some goods movement sources takes away the option of regulations in some instances.

2. Incentives

In recent years regulatory programs have been supplemented with incentives to accelerate voluntary actions such as replacing older equipment. Incentive programs such as the Carl Moyer Program are both popular and effective. They also help to demonstrate emerging technologies that then set a tougher emissions benchmark for regulatory requirements. Most of the existing incentive programs are designed to pay for the incremental cost between what is required and advanced technology that exceeds that level. The incentive programs are publicly funded by general fund taxes or by fees imposed on California drivers as part of their annual registrations, smog inspections or new tire purchases. California is currently investing up to $140 million per year to clean up older, higher emission sources. Ten percent of the Carl Moyer funds that flow through the state budget are reserved, by ARB, for projects of statewide significance, including goods movement-related clean up. The U.S. Congress recently authorized a similar diesel emissions reduction program at the national level for $200 million per year over five years but has not yet appropriated funds for that purpose.

3. General Obligation Bonds

As noted above, under the Administration's Strategic Growth Plan, general obligation bonds would generate $1 billion for clean air projects related to goods movement. The proposal would require that those funds be matched with $1 billion in total matching funds from private funds or from other appropriate local or federal funds. Discussions regarding this proposal are ongoing at the Legislature at this writing.

4. Federal Funding

The federal government has a responsibility to reduce goods movement related emissions for two reasons. First, U.S. EPA is legally obligated to reduce emissions from interstate transportation sources to the levels needed to protect public health everywhere in the U.S., including in California with its severe air pollution problems. Second, because California ports are a gateway to the U.S. market, the federal government must help mitigate the disproportionate impacts in California communities that are conduits for movement of imported goods to other states.

The U.S. EPA has taken effective action to make new trucks substantially cleaner in the future. It has done the same for new, off-road diesel equipment, although over a much longer timeframe. The federal government has yet to deal effectively with the more challenging emission sources. It needs to take aggressive action to push tougher international emission standards for ships; to set more stringent national emission standards for locomotives or marine vessels (those regulations are currently pending); and to help clean up the millions of *existing* diesel engines in interstate trucks, off-road equipment, locomotives and ships.

Where federal regulations cannot reach, the national government must step forward, as California did, with sufficient incentive funding to fill the gap. For example, a federal version of California's Moyer Program would be highly cost-effective. The U.S. EPA has provided several small grants thus far, contributing $953,000 to California goods movement-related projects under the West Coast Clean Diesel Collaborative. Congress also took a step in the right direction last year by authorizing up to $200 million a year for five years for the National Clean Diesel Campaign – now it must follow through with the allocation of actual funding.

5. User Fees

The issue of whether or not user fees should be imposed to fund part of the solution raises many legal and policy issues. For example, who would collect such fees, under what legal authority, in what amount, and for what purpose. This issue has been and continues to be the subject of ongoing discussion at the Legislature.

6. Market-Based Approaches

Market-based approaches are another alternative to fund emission reductions. Market-based approaches raise significant environmental justice issues. At this writing ARB is currently receiving public comments regarding market-based approaches in the context of the Emission Reduction Plan process.

VII. OTHER CRITICAL ISSUES

A. Innovative Technologies

A workgroup was convened to identify the role of innovative technology in the improvement of goods movement operations and systems. The work group consisted of individuals with expertise in ports, ships, rail, trucking, public health and the environment, community impacts and homeland security. It was determined that a widespread view of technology can lead to significant goods movement gains in productivity, security, safety, efficiency, and public health and environmental protection. In this regard the workgroup recommended that technology enhancements be integrated into all elements of the plan with a focus toward:

- Faster turnaround times for calling vessels.
- Shorter dwell times for containers and cargo.
- Optimal use of port resources such as yard space and cranes.
- Safe handling of cargo (particularly hazardous cargo).
- Enhanced facilities and services for users.
- Effective management of large volumes of information.
- Improved ability to mitigate public health and environmental impacts in adjacent communities.

Specific innovative technologies were identified in a preliminary manner for enhancement of equipment (Table VII-1), terminals (Table VII-2), the system (Table VII-3), and communications (Table VII-4). The specific technology enhancement measures are gauged on their ability to satisfy several goods movement criteria. When they are finalized, the tables can be considered preliminary evaluation models for prioritizing the implementation of new technologies.

Table VII-1: Equipment Technology Enhancements

Technology Enhancement Measures	Operations	Equipment	Infrastructure Implications	Improves Velocity	Throughput Enhancing	Reliability	Reduces Congestion		Reduces Environmental Impact	Commercially Available	Homeland Security Applications	System Compatibility	Costs	Responsibility for Implementation	Near Term Intermediate Long Term
	Criteria/Metrics														
Equipment							Terminal	Regional							
Electrical Rail Mounted Gantry Cranes	√	√	√		√	√	√			√		√	TBD	TO, P	IT
Dual Hoist Quay Cranes	√	√					√			√			TBD	TO	NT
Computer Automated Container System	√	√					√		√	√			TBD	TO	IT
Unitary Equipment Handling System	√	√	√				√			N/A		√	TBD	TO, P	IT
Energy Recovery/Hybrid Container Handling Systems		√							√				TBD	TO, RR	NT
Fuel Cell Locomotives		√							√				TBD	RR	IT
Hybrid Locomotives		√							√				TBD	RR	NT
LNG Locomotives		√							√				TBD	RR	IT
Standardization of Container Sizes				√									TBD		IT

LEGEND

P	Port Authority	O	Other
RR	Railroad	NT	Near Term
TO	Terminal Operators	IT	Intermediate
SL	Shipping Lines	LT	Long Term

Table VII-2: Terminal Technology Enhancements

				Criteria/Metrics											
Technology Enhancement Measures	**Operations**	**Equipment**	**Infrastructure Implications**	**Improves Velocity**	**Throughput Enhancing**	**Reliability**	**Reduces Congestion**		**Reduces Environmental Impact**	**Commercially Available**	**Homeland Security Applications**	**System Compatibility**	**Costs**	**Responsibility for Implementation**	**Near Term Intermediate Long Term**
							Terminal	**Regional**							
Terminal Enhancements															
Eliminate Chassis on Terminals	√				√	√			√	√	√		TBD	TO	IT
Minimize Free Time	√			√	√		√			N/A	√		TBD	P	NT
Maximize 24/7 Operation	√			√	√			√		N/A	√	√	TBD	TO, SL	NT
Off-Dock Container Storage Facilities	√				√					√			TBD	P, TO, O	IT
Off-Dock Empty Container Storage	√				√								TBD	TO, O, P	NT
Ship in a Slip	√		√	√						√			TBD	P, TO, SL	LT

LEGEND

P	Port Authority	O	Other
RR	Railroad	NT	Near Term
TO	Terminal Operators	IT	Intermediate
SL	Shipping Lines	LT	Long Term

Table VII-3: System Technology Enhancements

				Criteria/Metrics											
Technology Enhancement Measures	**Operations**	**Equipment**	**Infrastructure Implications**	**Improves Velocity**	**Throughput Enhancing**	**Reliability**	**Reduces Congestion**		**Reduces Environmental Impact**	**Commercially Available**	**Homeland Security Applications**	**System Compatibility**	**Costs**	**Responsibility for Implementation**	**Near Term Intermediate Long Term**
System Enhancements							**Terminal**	**Regional**							
Inland Port	√		√	√	√		√	√	√				TBD	RR, TO, P	IT
Maglev Cargo Conveyor	√	√	√					√	√				TBD		LT
Short Sea Shipping	√							√					TBD		LT
Gravity Conveyor System*			√						√				TBD		LT
Rail Electrification		√	√			√		√	√	√			TBD	RR	LT
Dedicated Clean Truck Fleet for Near-Dock		√							√	√		√	TBD	P, TO	IT
Optimize On-Dock	√		√	√				√	√	√		√	TBD	TO, RR	NT
Chassis Pool	√			√	√		√	√	√	√		√	TBD		NT

*** Requires further definition/study.**

LEGEND

P	Port Authority	O	Other
RR	Railroad	NT	Near Term
TO	Terminal Operators	IT	Intermediate
SL	Shipping Lines	LT	Long Term

Table VII-4: Communications Technology Enhancements

Technology Enhancement Measures	Operations	Equipment	Infrastructure Implications	Improves Velocity	Throughput Enhancing	Reliability	Reduces Congestion		Reduces Environmental Impact	Commercially Available	Homeland Security Applications	System Compatibility	Costs	Responsibility for Implementation	Near Term Intermediate Long Term
							Terminal	Regional							
Communications															
Radio Frequency Identification		√		√		√	√				√	√	TBD	TO	NT
Real Time GPS Inventory Systems		√		√		√	√			√	√	√	TBD	TO	NT
Java Enabled Mobile Phone GPS		√		√		√				√	√	√	TBD	TO	NT
GPS Geofence around sensitive neighborhood receptors		√				√			√	√	√	√	TBD	TO	NT
Virtual Container Yard		√		√	√		√	√		√		√	TBD	P, TO	NT
Appointment System		√		√	√	√	√	√	√	√	√	√	TBD	TO, O	NT
Computer Automated Terminal Information Management System		√		√		√	√			√	√		TBD	TO	NT

LEGEND

P	Port Authority	O	Other
RR	Railroad	NT	Near Term
TO	Terminal Operators	IT	Intermediate
SL	Shipping Lines	LT	Long Term

The proposed innovative technologies have varying levels of criteria satisfaction that become evident when comparing one group to another. Equipment enhancements tend to primarily reduce congestion and environmental impact. Whereas terminal enhancements tend to primarily enhance throughput. System enhancements tend to satisfy a wider scope of criteria more notably, especially in terms of reducing environmental impact and congestion. Likewise, communications technology tends to significantly meet a wide range of criteria. Communications technology tends to have especially high marks in velocity improvement, reliability improvement and homeland security applications. Communications technology also holds the greatest potential for near-term gains. These technologies enable the tracking of containers on a real-time basis and can enhance the identification of workers and trucks for homeland security considerations. Of special interest is the broader use of Radio Frequency Identification (RFID) and related technology with the ability to track trucks, containers, and chassis. Such technology provides the ability to institute operational improvements such as:

- Virtual Container Yards
  A virtual container yard is an Internet matching system for empty containers so that a physical container yard is not required and the return of empty containers to the port is minimized.

- Shared Chassis Pools
  A shared chassis pool is a regional pool of intermodal container chassis that can be used by different companies and truckers eliminating the need for truckers to bring their own chassis.

- Trucker Appointment Systems
  Trucker appointment system is an operational improvement at the ports where truckers schedule pickup and delivery times, thus reducing congestion and increasing velocity.

Collectively, the improvements enabled by innovative technology will reduce truck trips, improve velocity, and reduce emissions and congestion. Further research is necessary to more fully explore these and other technology applications. In addition to the innovative goods movement technologies described above, Caltrans and local transportation authorities are currently employing Intelligent Transportation Systems (ITS). ITS are the electronics, communications, or information technology processes applied to transportation operations that result in improved transportation efficiency and safety[27]. The potential to integrate technologies such as RFID with existing and future ITS offers vast opportunities in the improvement of goods movement operations and systems.

B. Consideration of Air Freight

The Goods Movement Action Plan work focuses on addressing the most significant and most immediate issues surrounding the current and future growth of goods movement in California. In this phase, the Administration is focused on the challenges and opportunities associated with

[27] California Department of Transportation (Caltrans). Local Assistance Program Guidelines (LAPG). Chapter 12, Section 12.6: *Intelligent Transportation Systems*. Page 12-15

container traffic that enters via California's global gateways. As of yet, the Goods Movement Action Plan work has not addressed air freight. Evaluation of the role of air freight in California's goods movement system will be considered in future phases of the Goods Movement Action Plan.

C. Land Use Decisions

The *California Transportation Plan 2025* cites three trends of land use decision-making that have contributed to the current transportation difficulties impacting goods movement and Californians in general: 1) lack of coordination between local, regional and state transportation planners; 2) single use zoning that isolates housing, service, retail and employment; 3) low-density land use (urban sprawl) and resulting in higher transportation infrastructure connectivity costs.[28] These trends resulted in a myriad of negative consequences such as longer commute times, increased reliance on fossil fuels, loss of habitat and open space, and decreased mobility. Important lessons can be derived from the land use decision trends of the past and incorporated into a broader understanding of wise land use decisions and smart growth policies.

Goods movement corridors and facilities are incompatible with certain land uses. California's goods movement system (primarily Southern California and the Bay Area) is located in close proximity to residential neighborhoods. This brings about a major source of contention due to the disparate characteristics between goods movement corridors/facilities and residential neighborhoods. It is widely known that goods movement operations and systems generate impacts on the surrounding communities and require mitigation. Furthermore, the urban location of California's main port facilities makes new goods movement development very difficult as new and expanded corridors/facilities will come into conflict with adjacent land uses. The problem posed by this conflict can be addressed with wise land-use decisions that adhere to principles of smart growth. Such principles are defined in the resolutions adopted in 1999 (HR 23 and SR 12) by the California Senate and Assembly:

1. **Plan for the Future**: Preserve and enhance California's quality of life, ensure the wise and efficient use of our natural and financial resources, and make government more effective and accountable by reforming our systems of governance, planning, and public finance.
2. **Promote Prosperous and Livable Communities**: Make existing communities vital and healthy places for all residents to live, work, obtain a quality education and raise a family.
3. **Provide Better Housing and Transportation Opportunities**: Provide efficient transportation alternatives and a range of housing choices affordable to all residents, without jeopardizing farmland, open space, wildlife habitat, and natural resources.
4. **Conserve Open Space, Natural Resources and the Environment**: Focus new development in existing communities and areas appropriately planned for growth while protecting air and water quality, conserving wildlife habitat, natural landscapes, floodplains and water recharge areas and providing green space for recreation and other amenities.

[28] State of California. California Transportation Plan 2025. March 2004. Page 17.

5. **Protect California's Agricultural and Forest Landscapes**: Protect California's farm, range and forest lands from sprawl and the pressure to convert land for development.

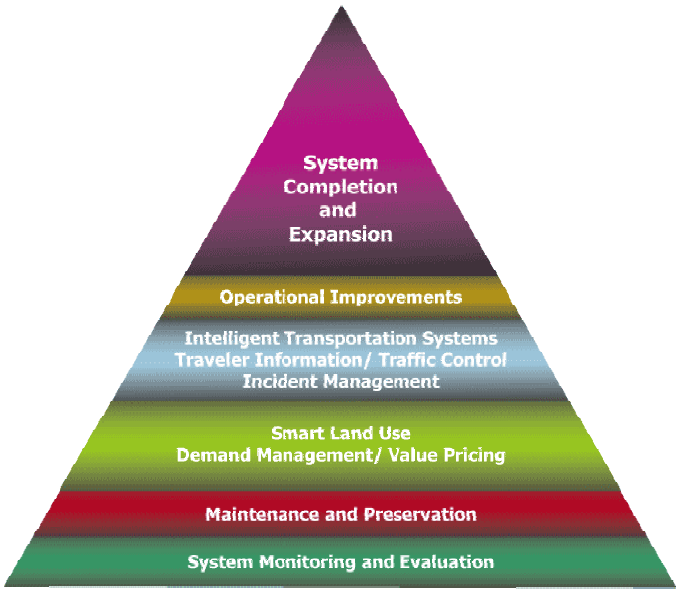
As land use planning is primarily a local function, it is crucial that local land use policies be strengthened to ensure that incompatible uses (e.g., residential) do not encroach on goods movement facilities and corridors. Land use decisions for goods movement corridors must be incorporated under these principles. Furthermore, land use decisions on and around California's ports need to consider the importance of such factors as energy fuel infrastructure and truck parking facilities. Goods movement facility land use decisions should: 1) consider the needs of all goods movement modes; and 2) integrate community and environmental concerns so as to mitigate impacts.

Land use planning is a local government function. As noted in the *principles* (Chapter III, Section A), it is important that land use implications are considered in goods movement decisions. Likewise, goods movement implications should be considered in land use decisions. The Air Resources Board's *April 2005 Land Use Handbook*[29], the Business Transportation and Housing Agency's *GoCalifornia* program, and other sources can aid local governments with such analyses. For example, providing adequate distance separation between receptors of pollution (e.g., residences, and schools) and sources of toxic air pollution (e.g., diesel particulate matter emissions) is an effective means of reducing public exposure to, and the health risks associated with, toxic air pollutants.

GoCalifornia promotes wise and integrated land use decisions as part of California's overall strategy for mobility. Mobility is not only a factor of Californians' quality of life, it directly related to the velocity and throughput of the statewide goods movement system. Mobility will be a key consideration as the state optimizes its role in the maintenance and growth of a world-class goods movement industry.

[29] Available at: http://www.arb.ca.gov/ch/landuse.htm

Figure VII-1: System Performance Improvement Pyramid

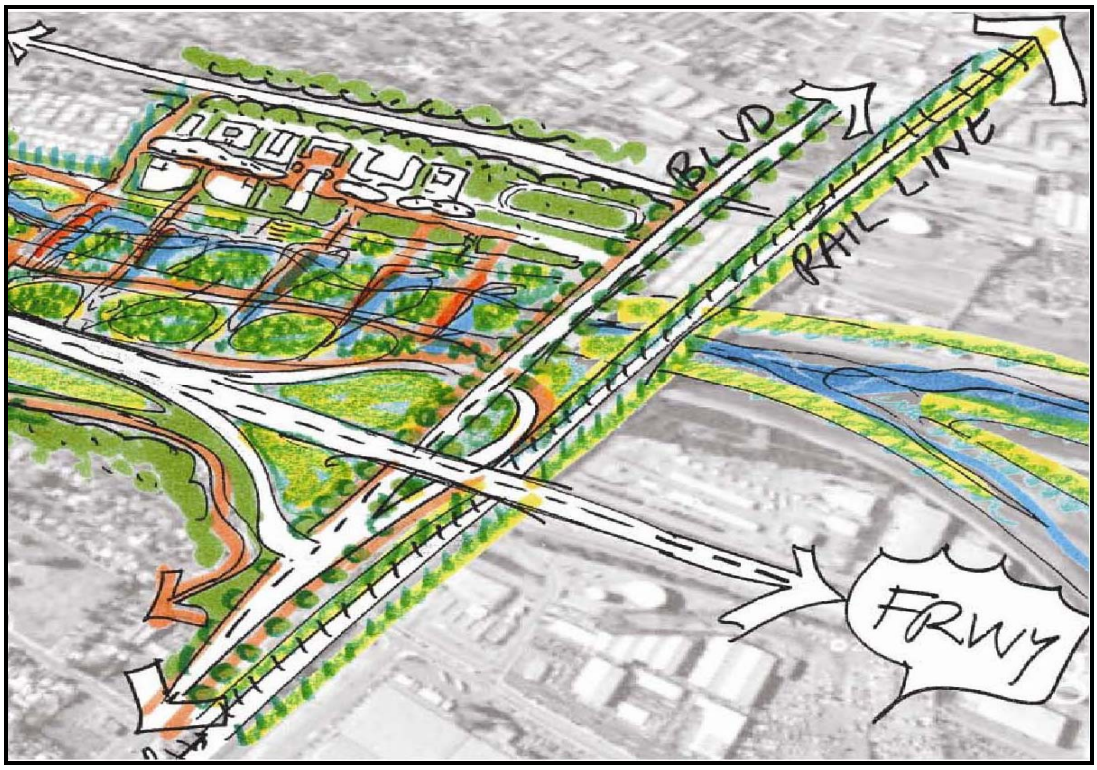


As the third tier of the *system performance improvement pyramid* (Figure VI-1), smart land use is foundational to other infrastructure activity. Compact growth generates additional savings for state and local governments by managing the need for additional infrastructure and services. Synergistic benefits accrue by coordinating and focusing expenditures on existing infrastructure investments versus expansion. High density residential, coordinated commercial and retail development and major employers located along rail and transit lines are primary examples of the benefits of tying wise land use, compact growth, and modal enhancement to existing infrastructure.[30] This topic deserves further exploration and the state should investigate ways to encourage adherence to these guidelines.

A goods movement concept that embodies the principles of smart growth and employs wise land use decision making is the "Green Freight Corridor."[31] As part of the broader *Green Freight Initiative*, this concept emphasizes buffer zones between goods movement land uses and adjacent, non compatible land uses. For instance, a *green* freeway or rail corridor would be bordered by open space and habitat-restoring wetlands. Residential land uses then become adjacent to a compatible land use. A *green corridor* would be crossed by *green land bridges* rather than surface road overpasses in order to connect communities to regional trails and parks, thus encouraging pedestrian and bicycle traffic. The *Green Freight Corridor* is an example of the much needed innovative and creative approach to wise land use decisions and smart growth that will enable Californians to reap economic, environmental and community benefits.

[30] From GoCalifornia Powerpoint Presentation 2005.
[31] From the Presentation: The GREEN Freight Initiative: A New Vision With New Values and a New Commitment. Prepared by: Southern California Leadership Council; LAEDC Center of Economic Development; Los Angeles County Economic Development Corporation; AECOM –DMJM Harris –EDAW. November 2005

Figure VII-2: Green Corridor



VIII. CONCLUSIONS

The State's economy and quality of life depend upon the efficient, safe delivery of goods to and from our ports and borders. At the same time, the public health and environmental impacts from goods movement activities must be reduced to ensure protection of public health. This Progress Report presents a draft Framework for Action for inclusion in the Goods Movement Action Plan. The draft Framework for Action includes principles, criteria, metrics, and benchmarks for actions to improve infrastructure, to mitigate public health and environmental impacts, to mitigate community impacts, to develop jobs, and to improve public security and safety. It also includes priority actions in all these areas.

The overarching themes behind the principles for the development of the Framework for Action are:

- Undertaking simultaneous and continuous improvement in infrastructure and public health and environmental impact mitigation and community impact mitigation.
- Considering the four port-to-border corridors as one integrated system.
- Pursuing excellence through technology, efficiency, and workforce development.
- Developing partnerships to advance goals.
- Promoting trust, providing for meaningful public participation, and ensuring environmental justice consistent with state law.

The expert stakeholder and public input to date, as part of a transparent process, have greatly enhanced the agencies' ability to develop the draft Framework for Action for public review in early 2006. Efforts to date show that developing criteria, metrics, and benchmarks can aid the decision making process. Further iterations will likely improve the value of their application.

Community workshops are being held in February and March at various locations in the state to gather additional input from the public. The Integrating Work Group will continue to meet in the first few months of 2006. Concurrently, the Air Resources Board ("ARB") is conducting its public process for the Emission Reduction Plan which the Board plans to hear testimony on and consider approval of in the Spring of 2006.

APPENDIX A
GLOSSARY and ABBREVIATIONS

Bunker Fuel: A low-grade diesel fuel typically used to power ships.

Chassis: In shipping, a trailer or undercarriage on which containers are moved over the road

Criteria: Criteria are specific elements that help determine the relative merits of candidate projects and actions to achieve desired outcomes. (See below, 'metric', for a related term.)

Cross-Sectoral: Refers to impacts/vulnerabilities in one sector of the goods movement system that may affect other sectors.

Design-Build: Also known as "design-construct" or "single responsibility, design-build is a system of contracting under which one entity performs both architecture/engineering and construction under one single contract.[32]

Design-Sequencing Design-sequencing is defined as a method of contracting that enables the sequencing of design activities to permit each construction phase to commence when design for that phase is complete, instead of requiring design for the entire project to be completed before beginning construction.

Goods Movement: The processes and activities involved in the pickup, movement and delivery of goods (agricultural, consumer, and industrial products and raw materials) from producers/points of origin to consumers/point of use or delivery. 'Goods movement' relies on a series of transportation, financial and information systems for this to occur, that involves an international, national, state, regional and local networks of producers and suppliers, carriers and representative agents from the private sector, the public sector (federal, state, regional and local governmental agencies), and the general public.

Green Equipment: In goods movement, refers to equipment (such as locomotives, trucks, and cargo loading/unloading equipment at ports, rail yards, and truck terminals that utilizes emissions-reducing technologies. Existing fleets can be retrofitted with 'green' technologies that may be a cost-effective way to reduce sources of PM (particulate matter, see below) or NO_x (oxides of nitrogen, see below).

[32] Definition from *Design-Build Institute of America.* Available online at http://www.dbia.org/

Green Goat: Term used by the Burlington Northern Santa Fe railway to describe hybrid locomotives powered by batteries, with a small diesel engine for recharging the batteries and for providing additional power. Hybrid locomotives use less diesel fuel and produce fewer particulate emissions than conventional locomotives.

Infrastructure: In goods movement, the system of roads, rail lines and yards, bridges, ports, airports and intelligent transportation systems that support the safe, efficient and effective movement of goods throughout the system. 'Infrastructure' in this context can also include the resources required to support goods movement, such as personnel, buildings, equipment and logistical support.

Local Destination: These are stores and factories that represent the final destination of cargo within an area typically served by trucks. For the Southern California ports, these destinations are stores and factories west of the Rocky Mountains. Cargo for the immediate region can be routed directly to the final destination or through a transload facility and/or warehouse. Cargo for more distant places will usually require the services of a transloader or warehouse in order to achieve cost savings from transferring cargo from marine containers into larger domestic trailers.

Local and Non-Local Origin: For loaded containers origins are usually manufacturers that produce for export. Usually these westbound shipments do not involve intermediate handling or consolidation.

Marine Vessel: The marine vessels calling at the Ports are owned (or leased) by global shipping companies. Container vessels operate on regularly scheduled services that call at a predetermined group of ports, normally on a weekly basis. The carrier operating the vessel contracts with terminal operators for the use of their facilities and services for unloading, loading or temporary storage of goods.

Marine Terminal: The marine terminal is a facility designed to load and unload cargo on and off the marine vessels. Space within the terminal is also allocated for short-term storage of cargo and processing pick-up and delivery of cargo (by truck, rail, or marine vessel in the case of container cargo). At the Port of Long Beach the marine terminals are built on Port-owned land and leased to private companies. The companies that lease terminals at the Port of Long Beach are usually global terminal operators or the terminal operating division of global shipping companies.

Metric: A standard of measurement. Refers to an objective standard against which outcomes can be measured and evaluated. (See above, 'criteria', for a related term.)

Mitigation: In goods movement, refers to the preventing, removing or alleviating the negative health and community impact effects of proposed, current, or past infrastructure projects and activities on adjacent communities and regions, as they affect (or produce) air quality, water quality, noise, solid waste, aesthetics, or other community physical or social resources.

Non-Local Destination: This destination may be a rail yard, warehouse, retail outlet or manufacturer that is located east of the Rocky Mountains. Cargo headed for these areas may require additional handling at a transload facility and/or a warehouse prior to leaving the area by rail. Only a small portion of cargo destined for the Eastern States is trucked directly from the port's terminals.

NO_x: Nitrogen Oxide. Nitrogen oxides are typically created during engine combustion processes, and are major contributors to smog formation.

Near-Dock Rail Yard: Near-dock rail yards are rail yards located near ports and are dedicated to handling port cargo. Unlike on-dock rail yards, they serve more than one marine terminal and thus tend to be much larger than their on-dock counterpart. Trucks are used to move the containers between these facilities and the marine terminals. The close proximity to port operations usually eliminates the need to truck containers on regional highways. These yards are operated by railroads for the benefit of their customers (marine carriers and/or logistics companies). As with off-dock rail yards, the sorting and grouping of cargo needed to build trains is done within a near-dock rail yard.

Off-Dock Rail Yard: Off-dock rail yards are rail yards located within the region served by a port and handle port cargo as well as domestic cargo from other local sources. Cargo must be trucked from the marine terminals or local transload facilities to these yards, which are operated by the transcontinental railroads serving the local area. In Southern California the major off-dock rail yards are located near downtown Los Angeles and east of Los Angeles to San Bernardino, meaning port cargo trucked to and from these facilities has moved on the regional freeway system. Cargo is sorted and grouped by final destination in these facilities.

On-Dock Rail Yard: On-dock rail yards are rail yards located within marine terminals. They receive imported cargo discharged from marine vessels as well as westbound trains arriving with exports. These facilities usually consist of rail tracks for loading and unloading trains and temporary storage of rail equipment and cargo, and a staging area for stockpiling containers. Marine terminals operate on-dock rail yards for the benefit of the carriers using the facility. Individual marine terminals may or may not have facilities for handling cargo via on-dock rail.

PM: Particulate Matter. Any material, except pure water, that exists in the solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products. Most of the focus in this plan is on PM with a particle size of 2.5 to 10 microns.

PierPass: PierPass is a program created by marine terminal operators to reduce congestion and improve air quality in and around the Ports of Los Angeles and Long Beach. This is accomplished by incentivizing shippers and receivers to have marine shipping containers picked up or dropped off during off-peak travel hours, including weekday evenings and weekends, and by funding the higher cost of evening and weekend terminal operations by charging a fee for container movement during peak travel hours.

Public Private Public private partnerships (PPPs) are arrangements between government and private sector entities for the purpose of providing public infrastructure, facilities and related services. Such partnerships are characterized by the sharing of investment, risk, responsibility and reward between the partners.[33]

Regional Chassis Pool: A centralized, consolidated pool of chassis (see above) that reduces the need for individual truckers to own and maintain their own chassis. Regional chassis pools may be operated by ports (as in the Virginia Port Authority's regional chassis pool) or others; and may be a cost-effective mechanism to provide sufficient and up-to-date chassis capacity to the goods movement industry.

Reliability: In goods movement, the ability of the system to move a product (or vehicle) from point A to point B in a certain time every time. The less variability there is in that travel time, the more reliable that transportation system is considered.

[33] Definition adapted from "Public Private Partnership: A Guide for Local Government." British Columbia Ministry of Public Affairs. May 1999. Available online at http://www.mcaws.gov.bc.ca/lgd/pol_research/MAR/PPP/

Retirement: An air quality improvement strategy to reduce the number of older, higher-polluting trucks and other goods movement equipment that are operating in California. May involve incentives to owners.

Retrofit: In goods movement, an air quality improvement strategy to modify the engines and emission control systems of trucks and other equipment to produce lesser emissions.

Repower: In goods movement, the replacement of an older, more polluting diesel engines with a newer, less polluting types. May also involve use of alternative fuel sources, such as liquid natural gas (LNG) or electric propulsion.

Sensors: An air quality monitoring tool. Sensors are placed at specific locations throughout a region or in an air quality monitoring 'hotspot' to monitor levels of various pollutants or other factors throughout the day and under various environmental conditions (such as temperature). The data may be used for various purposes, from establishing a pollution baseline, to developing evaluations of current emissions readings or traffic volumes.

Sulfate: A salt or ester of sulfuric acid. (See below.)

Sulfur Oxides: Pungent, colorless gases (sulfates are solids) formed primarily by the combustion of sulfur-containing fossil fuels, especially coal and petroleum products. Considered major air pollutants, sulfur oxides may impact human health and damage vegetation.

Throughput: In goods movement, a measure of 'how much' cargo is moving through the system, measured in terms of volume of trucks, trains, or cargo. Generally, the goal is to increase throughput, by increasing the capacity of the transportation system, access to or from the system, by increasing its operating efficiency, and by reducing unnecessary restrictions.

Transload Facility: A transload facility is often the first stop for imported cargo that requires additional sorting and routing. Transload facilities can also process export cargo. Many of these facilities locate near ports where they can move the maximum amount of port cargo with the fewest number of trucks. At this stage, the contents of a marine container coming from the Port will be unloaded and transferred to one or more domestic containers or trailers for delivery to local stores and factories or to an off-dock rail yard. Transload facilities are operated by various kinds of companies, including truckers, warehouse operators, logistics companies, or

	even large retailers. In most cases transload facilities will conduct "cross-dock" operations where the cargo is not stored at the location, or is stored for very short periods. Some operations will provide additional basic services like tagging or labeling cargo as it is sorted.
Velocity:	In goods movement, a measure of 'how fast' cargo is moving through the system, measured in terms of average vehicle speed. Generally, the goal is to increase velocity, by the elimination of congestion bottlenecks and system gaps.
VOC:	Volatile Organic Compounds. Carbon-containing compounds that evaporate into the air (with a few exceptions). VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.
Warehouse:	Warehouses offer longer storage periods for cargo as well as additional processing and distribution services compared to transload facilities. As a result, they can be significantly larger than transload facilities. Warehouses are scattered throughout the Los Angeles area, although clusters of warehouses can be found near the ports and along the major freeways. Warehouses, ranging widely in size up to one million or more square feet, can be independently owned or be parts of larger trucking and logistics companies.

APPENDIX B
TRANSPORTATION PROJECT PLANNING AND PROGRAMMING PROCESS

The following chart illustrates graphically the transportation project planning and programming process in California. The following defines some of the key steps and players in that process.

California Transportation Commission (CTC): The CTC is responsible for the programming and allocating of funds for the construction of highway, passenger rail and transit improvements throughout California.

California Transportation Plan (CTP): The CTP provides long-range (over twenty years) direction for planning, developing, and operating California's transportation system. The CTP is developed in collaboration with other state and local agencies, the federal government, members of the public, Tribal Governments and the private sector.

Interregional Transportation Improvement Program (ITIP): The Interregional Transportation Improvement Program (ITIP) is a five-year program developed by the Department of Transportation (Department) that programs funds for interregional projects that increase the capacity of the transportation system. The Department proposes 25 percent of STIP funding for interregional projects in the ITIP.

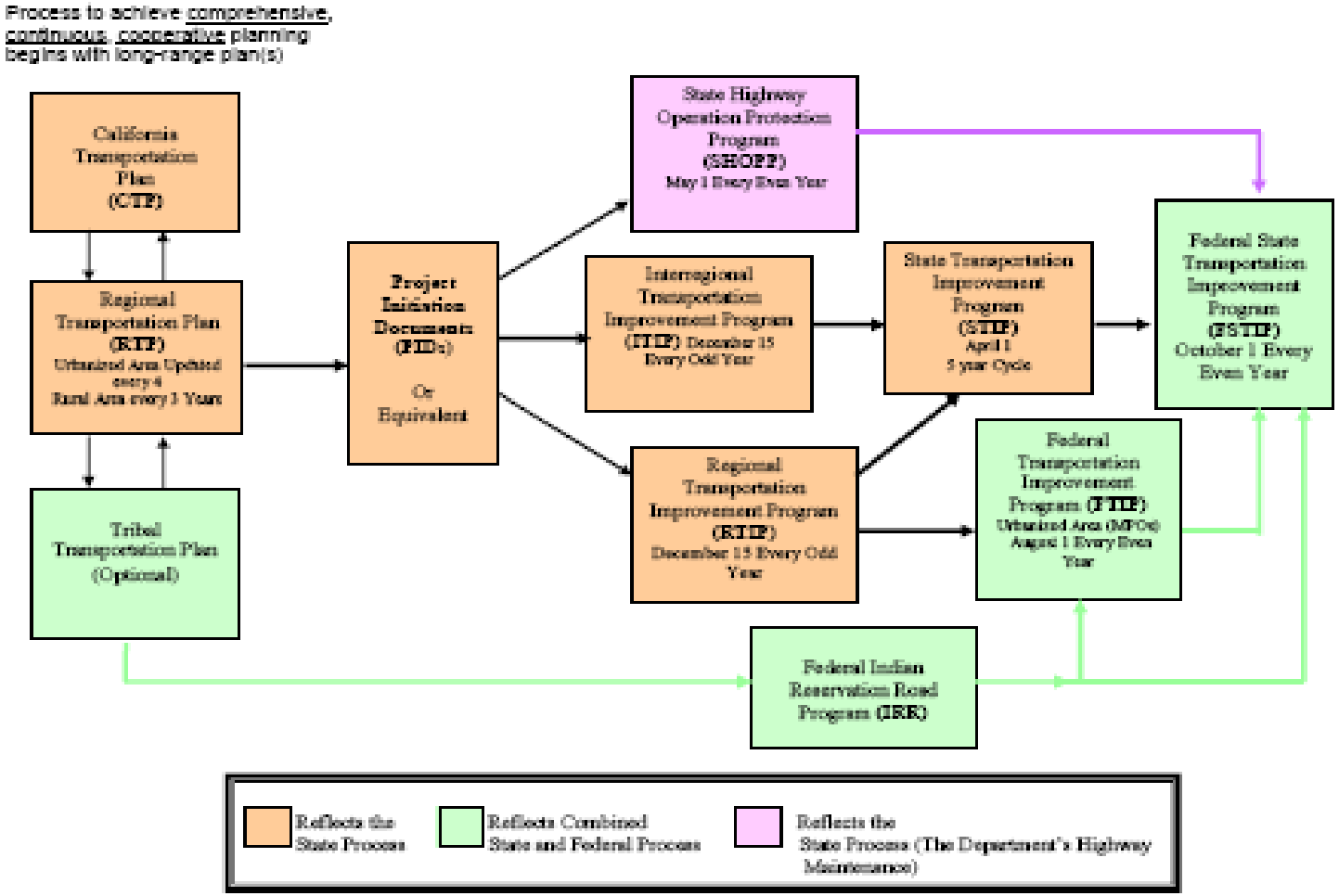
Regional Transportation Improvement Program (RTIP) The RTIP is a five-year plan identifying all the transportation projects for the region that are eligible for funding in the State Transportation Improvement Program (STIP). The Regional Transportation Planning Agencies (RTPAs), together with the County Transportation Commissions in Southern California, propose 75 percent of STIP funding for regional transportation projects in their RTIPs.

Regional Transportation Plan (RTP): The RTP, prepared by both Metropolitan Planning Organizations (MPOs) and RTPAs, is required by both State and federal law. It is designed to spell out, over 20 years, the policies, actions, and financial framework for the development of the region's transportation system, including highways, rail, maritime, and air, for both people and goods movement. It is intended to be the product of an integrated, statewide, multimodal, regional transportation planning process; that is based on a uniform regional transportation planning framework; and that involves the public in the transportation planning process that facilitates transportation decision-making without sacrificing equity or the environment.

State Highway Operations and Protection Plan (SHOPP): The Department develops the SHOPP, which includes projects to maintain the safety and integrity of the State highway system, such as road and bridge rehabilitation, traffic safety and operational improvements.

State Transportation Improvement Program (STIP): The State Transportation Improvement Program (STIP) is a five-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the State Highway Account and other funding sources. The STIP is adopted by the California Transportation Commission (CTC) and reflects regional and statewide interests and project funding recommendations, as identified in the regions' RTIPs and in the State's ITIP.

State of California
Transportation Project Planning and Programming



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APPENDIX C

Preliminary Working List of Proposed Projects
Trade Corridors and Goods Movement Infrastructure

February 2006

The following is a preliminary working list of proposed trade corridor and goods movement infrastructure projects. These projects have been selected from a larger set of prospective projects. This preliminary working list is part of the transportation component of the Governor's Strategic Growth Plan which includes other statewide transportation projects aimed at congestion reduction.

Los Angeles/Inland Empire Corridor

Project Title/ Description	County/ Route or Sponsor	Location/ Post Mile	Immediate, Short, Intermediate, Long Term	Cost (in millions)	Committed Public Funding (in millions)*	Funding Source	Principle Benefit	Project Status Comments
Alameda Corridor State Route 47 Expressway (includes Schuyler Heim Bridge replacement)	Los Angeles 47	3.497 - 3.499	Short	420	246 10	SHOPP SAFETEA-LU earmark	Throughput, reliability	Environmental
Environmental Study: Interstate 710 Corridor Improvements (including dedicated truck lanes)	Los Angeles 710	4.960 - 24.627	Short	30	0		N/A	Study initiation pending funding identification
Gerald Desmond Bridge Replacement	Port of Long Beach		Short	765	5 100	TEA-21 SAFETEA-LU earmark	Throughput	Environmental; Port/public funding option
BNSF "Southern California International Gateway" Near Dock Facility	Port of Los Angeles/ BNSF	Los Angeles, south of Sepulveda Blvd.	Short	176	0		Throughput	Environmental

* Amounts in this column represent publicly committed funds. Many projects are candidates for public-private partnership funding as noted in the Project Status Comments column.

Project Title/ Description	County/ Route or Sponsor	Location/ Post Mile	Immediate, Short, Intermediate, Long Term	Cost (in millions)	Committed Public Funding (in millions)*	Funding Source	Principle Benefit	Project Status Comments
Union Pacific Near Dock Intermodal Container Transfer Facility Completion	Ports of Los Angeles/ Long Beach/UP	Los Angeles, north of Sepulveda Blvd.	Short	100	0		Throughput	Planning; port/public/ private funding option
On-dock Rail Improvements	Port of Long Beach		Short/ Intermediate	379	0		Throughput	Planning, environmental; Port funding
On-dock Rail Improvements	Port of Los Angeles		Short/ Intermediate	170	0		Throughput	Planning, environmental; Port funding
Alameda Corridor East - Grade Separations, Grade Crossing Improvements (Burlington Northern Santa Fe and Union Pacific lines)	Los Angeles, Orange, Riverside, San Bernardino	110 grade separations and 44 grade crossing improvements	Varies (short to intermediate term)	2,500	560 211	STIP, TCRP SAFETEA-LU earmarks	Environmental mitigation, safety	Seven projects in construction; 12 projects in design or right-of-way acquisition
Rail capacity improvements, including mitigation measures (e.g., completion of BNSF third main track, Fullerton to Los Angeles-$180 million)	Los Angeles, Orange, Riverside, San Bernardino	BNSF-San Bernardino Sub 143.1 - 165.5; 43.0 - 0.0 BNSF - Cajon Sub 73.9 - 55.9 UP Alhambra Sub 482.8 - 538.5 UP Los Angeles Sub 1.6 - 56.7	Varies (short to long term)	3,400	86	STIP	Throughput, velocity	$41 million under construction; Public/private funding option
Truck Lanes, SR 14 to Calgrove Blvd.	Los Angeles 5	R45.58-R49.03	Intermediate	60	2	SAFETEA-LU earmark	Throughput, velocity	

Project Title/ Description	County/ Route or Sponsor	Location/ Post Mile	Immediate, Short, Intermediate, Long Term	Cost (in millions)	Committed Public Funding (in millions)*	Funding Source	Principle Benefit	Project Status Comments
Colton Crossing BNSF/UP Rail Grade Separation	San Bernardino	UP-Yuma Sub 538.7	Intermediate	150	0		Reliability, safety	Project scoping study; Public/private funding option
Interstate 710 Corridor Improvements (including dedicated truck lanes)	Los Angeles 710	4.960 - 24.627	Long	5,470	8	SAFETEA-LU earmarks	Throughput, safety, reliability	

Bay Area Corridor

Hegenberger Road to I-980 Operational Improvements	Alameda 880		Short	20	0		Reliability, safety	
I-80/I-680/SR 12 Interchange Improvements, Phase II	Solano 80/680/12	17.9-11	Short	140	11 31 17	STIP Local SAFETEA-LU earmark	Throughput, velocity	Project scoping
Reconstruction of 7th Street/Union Pacific Grade Separation	Port of Oakland		Short	100	0		Throughput, safety	Environmental Port/public funding option
Outer Harbor Intermodal Terminal	Port of Oakland		Short	88	0		Throughput	Planning Port/public funding option
I-80/I-680/SR 12 Interchange Improvements, Phase III	Solano 80/680/12	17.9 - 11	Intermediate	100	50	Local	Throughput, velocity	Project scoping
I-80/I-680/SR 12 Interchange Improvements, Phase IV	Solano 80/680/12	17.9 - 11	Intermediate	466	0		Throughput, velocity	

Project Title/ Description	County/ Route or Sponsor	Location/ Post Mile	Immediate, Short, Intermediate Long Term	Cost (in millions)	Committed Public Funding (in millions)*	Funding Source	Primary Impact	Project Status Comments
I-580 Eastbound Truck Climbing Lane	Alameda 580	R8.5/R5.1L	Long	65	0		Velocity	Proposal only

Central Valley Corridor

SR 99 Widening, 4 to 6 lanes, Goshen to Kingsburg	Tulare 99	41.3 - 53.9	Intermediate	134	2 15	STIP SAFETEA-LU earmarks	Throughput	
SR 99 Widening, 4 to 6 lanes, Prosperity Ave. to Goshen	Tulare 99	30.1 - 41.3	Intermediate	126	2	STIP	Throughput	
I-580 Westbound Truck Climbing Lane	San Joaquin	.03R/R5.4	Long	70	1	STIP	Velocity	

San Diego/Border Corridor

SR 905 Six-Lane Freeway (from Mexico border/Otay Mesa Port of Entry to Interstate 805)	San Diego 905	5.2 - 11.6	Short	454	127 21 34 66 12	STIP TCRP Local TEA-21 SAFETEA-LU earmarks	Velocity	Design, ROW acquisition

State Gateways and Central Coast

Central Corridor Double Track, Tunnels Modification	Union Pacific, Nevada, Placer		Short	29			Throughput	

Corridor Total: ***15,412*** ***1,607***

Operational Strategies

Operational strategies are discussed more fully in the Preliminary Candidate Actions (Chapter IV). However, from a goods movement system efficiency improvement basis, those key actions include:

- Pier Pass Program Expansion (night, weekend port gates)
- Terminal Container Dwell Time Limitation Incentives
- Port/Rail Yard Equipment Upgrades (e.g., electrified container and gantry cranes, alternative fuel yard hustlers, stackers and fork lifts, etc.)
- Enhanced Ocean Shipping Line/Domestic Carrier/Shipper-Receiver Information Exchange
- Common Chassis Pools
- Virtual Container Yards
- Container/Trailer Pickup/Drop-off Appointment Systems
- Roadside Rests/Truck Parking
- Inland Ports/Short-Haul Maritime Container Rail Shuttles
- Short-Sea Shipping

Abbreviations

BNSF: Burlington Northern Santa Fe Railroad
I: Interstate
SAFETEA-LU: Safe, Accountable, Flexible, Efficient, Transportation Equity Act-A Legacy for Users
SHOPP: State Highway Operations and Protection Program
SR: State Route
STIP: State Transportation Improvement Program
TEA-21: Transportation Efficiency Act for the 21st Century
TCRP: Transportation Congestion Relief Program
UP: Union Pacific Railroad

PLACEDHOLDER:

APPENDIX D:

AIR RESOURCES BOARD EMISSION REDUCTION PLAN FOR PORTS AND INTERNATIONAL GOODS MOVEMENT